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Companies To Watch



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Securing The Network One Firewall At A Time

Palo Alto Networks Enables Enterprises To Maintain Better Visibility & Control

by Joanna Clay

■ **PALO ALTO NETWORKS** has application control solutions that could save your network. According to the company's latest research, 36% of enterprise network traffic is comprised of hundreds of applications that can evade the controls of conventional security solutions by either using SSL or port-hopping capabilities. So instead of trying to ignore this big elephant in the computer room, Palo Alto Networks wants to expose application vulnerabilities by giving enterprises tools to regain network management, stop corrupt applications, and simplify security with next-generation firewalls.

"Most companies turn a blind eye to encrypted traffic on their networks, which is a big mistake," says Mike Haro, director of corporate communications for Palo Alto Networks (www.paloaltonetworks.com). "More and more applications follow Twitter, Facebook, and Gmail, who all have enabled SSL either as a standard setting or as a user-selectable option in an effort to create the perception of improved security for its end users."

Palo Alto Networks knows the workplace has become more social—and it's tracked the trends for you. "Contrary to popular opinion, social networking has not meant the death knell of Web mail and IM," Haro says. "Compared with 12 months ago, IM traffic as a percentage of overall traffic has more than doubled, while Web mail and social networking increased nearly five times."

Palo Alto Networks helps enterprises monitor application security through three unique identification technologies: App-ID for port classification, User-ID for user- and group-based security, and Content-ID for scanning Web data and file transfers. In addition, it offers the PA-5000 series of firewalls for data centers, Internet gateways, and service providers.

From Concept To Reality

Nir Zuk, founder and chief technology officer of Palo Alto Networks, started the company in 2004 with the intention of providing practical firewall solutions, making it possible for enterprises to embrace Web 2.0 and maintain complete visibility and control.

"In 2004, I was working inside [a networking company] and wondered why

there had been no real innovation in the market in years—the existing firewalls were based on decade-old designs. I wanted to build the next-generation product but realized it would be impossible [at my current company] so I decided to do it on my own," Zuk says. Zuk met with colleague Asheem Chandna to hash out ideas and

Target Traffic Exploitations

The company believes that many network security technologies are falling behind the times and won't be able to monitor the increasing density of traffic. But enterprises can rely on Palo Alto Networks as a high achiever in network threat prevention.



Company Name: Palo Alto Networks

Location: Santa Clara, Calif.

URL: www.paloaltonetworks.com

Date Company Founded: 2004

Interesting Fact: Palo Alto was formed by a network security product developer who saw a need for firewall innovation, quit his job, raised capital, and started a new business. Seven years later, Palo Alto has more than 4,300 customers.



"The IT industry is relying on outdated technology for network protection and is missing huge security holes," Zuk says. "Most network security products that enterprises use today cannot see, let alone manage, a significant portion of network traffic based on applications' abilities to port hop, based on encryption, and also based on the antiquated security technologies still out there en masse. We analyzed network traffic from over 1,250 enterprises and concluded that a third of all bandwidth is encrypted traffic. This should be viewed as unacceptable."

So, how does Palo Alto Networks implement a simple solution for root security problems, such as the lack of network visibility and unnecessary appliance complexity? Plain and simple: It fixes the firewall.

More specifically, it's developing a new Skunk Works project to be unveiled this summer. "We are focused on grabbing share very quickly in a \$10 billion market," Zuk says. "More than 4,300 customers have rapidly adopted our solution, and we are seeing very strong interest from customers across the globe. We see an open highway ahead of us." P

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I Fewer Than Half Of Enterprises Quantify Social Media Performance

A Hypatia Research report, "Benchmarking Social Community Platform Investments & ROI," reveals that only about 40% of enterprises surveyed determine social media's return on investment on a regular basis, and 13% don't make an effort to take stock on its results at all. One of the metrics used to measure ROI is customer satisfaction, mentioned by 15.4% of respondents. Most of the social media tools the enterprises surveyed use concentrate on two or more of the following aspects: customer service and support; product innovation and ideation; sales and marketing; and customer analysis, profiling, and segmentation.

I Caltech Researchers Scale Up DNA Computing

According to research being conducted at Caltech, there may someday be computers that function biologically, rather than mechanically. Scientists there have produced what they say is the world's largest computational circuit based on DNA. If successful, these computers, because of their infinitesimal size, could be embedded in cells or tissues to detect and treat diseases. The process involves the production of synthetic strands of DNA, which can then be used to create "logic circuits" much like integrated circuits. Results so far are promising, but there are downsides, namely speed of the

computations, which can take up to 10 hours. However, researchers feel this will only be a temporary setback as continued developments increase the computational speed.

I GM To Construct \$130 Million Data Center

General Motors is planning to spend \$130 million to build a new modular data center in Warren, Mich., that is designed to reduce operating costs and cut energy use by 40%, the company says. Slated for completion in 2015, the IT Operations and Command Center data center will be the hub for GM's global digital applications, and it will employ 25 new IT staff members. GM anticipates that the building will receive the U.S. Green Building Council's Leadership in Energy and Environmental Design certificate. This initiative is part of GM's plan to invest \$2 billion in 17 facilities.

I eBay Buys E-Commerce Platform Developer

Online auction stalwart eBay announced an agreement to buy the remainder of Magento, maker of an open-source enterprise e-commerce platform. eBay previously bought a minority share in the company more than a year ago. Terms of the deal were not publicized, but it is expected to close in the third quarter of this year. Los Angeles-based Magento employs about 300 people and markets products such as Magento Go, a hosted SaaS for small businesses, and other enterprise-class e-commerce solutions. The companies say that the acquisition will fuel development of eBay's X.Commerce platform.

WATCH THE STOCKS

This information provides a quick glimpse of current and historical stock prices and trends for 14 major companies in the technology market.

Company	Symbol	Year Ago	May 25 \$	June 9 \$	% change from previous issue
AMD	AMD	\$8.01	\$8.43	\$7.64	▼ 9.37%
Apple	AAPL	\$250.51	\$336.78	\$331.49	▼ 1.57%
CA Technologies	CA	\$19.68	\$22.64	\$21.98	▼ 2.92%
Cisco Systems	CSCO	\$22.77	\$16.19	\$15.31	▼ 5.44%
Dell	DELL	\$13.07	\$15.51	\$15.67	▲ 1.03%
Google	GOOG	\$487.01	\$519.67	\$516.73	▼ 0.57%
HP	HPQ	\$46.50	\$36.01	\$35.46	▼ 1.53%
IBM	IBM	\$127.68	\$167.75	\$164.84	▼ 1.73%
Intel	INTC	\$20.55	\$22.68	\$21.76	▼ 4.06%
LinkedIn	LKD	N/A	\$94.33	\$72.01	▼ 23.66%
Microsoft	MSFT	\$25	\$24.19	\$23.96	▼ 0.95%
Oracle	ORCL	\$22.20	\$32.99	\$31.63	▼ 4.12%
Red Hat Software	RHT	\$30.07	\$43.07	\$42.49	▼ 1.35%
Symantec	SYMC	\$14.43	\$18.93	\$18.85	▼ 0.42%

NOTE: This information is meant for reference only and should not be used as a basis for buy/sell decisions.

I Sony Falls Victim To More Hacks

Sony was once again the target of hackers recently as its Sony Pictures Web site was broken into by a group calling itself LulzSec. According to the group, using an SQL injection attack, it was able to steal personal information such as passwords, birthdates, and addresses from more than 1 million users. The



LulzSec group posted 150,000 of the records it acquired, which it says were stored in plain text with little to no encryption. Sony has been struggling with its Web security following an April attack on the PlayStation Network, the company's online gaming platform, that left nearly 77 million users vulnerable to identity theft and other threats.

I Malware On The Rise, According To McAfee Report

In Q1 2011, malware attacks reached record highs, with February alone seeing 2.75 million new and unique types of malware, according to McAfee's Threats Report: First Quarter 2011. The two mobile operating systems that were targeted the most were Symbian and Android, and with the popularity of Android continuing to grow, McAfee says it expects to see even more new types of malware specifically designed to attack the platform. In more positive news, the report also said that McAfee has seen a precipitous decline in spam, largely due to the demise of the Zeus and Rustock botnets.

I Apple Plans New "Spaceship" Campus

Apple CEO Steve Jobs recently attended a meeting of the Cupertino City Council and presented his company's plan to build a spaceship-like circular building large enough to house 12,000 Apple employees. The new building, which would be about four stories tall, would be located on land that Apple originally purchased from HP. The company is planning a "green" facility that includes an energy center that will generate primary power for the campus, while relying on the grid for backup power. Jobs said that the plan is to landscape 80% of the new campus and put most of the parking underground.

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VALUABLE BRANDS, REPUTABLE COMPANIES

Two recent surveys looked at the most valuable brands in the world and the most reputable companies in the United States. Not surprisingly, many tech companies made the Top 10 lists, but only Apple and Google appeared in both.

Apple was ranked as the most valuable brand for the first time, according to the top 100 list compiled by research agency Millward Brown. Google has taken the top spot for the past four years. Other notables from the list include AT&T, which ranked No. 7, up from No. 22 last year, and Facebook, which made the list for the first time at No. 35.

TOP 10 Most VALUABLE Global Brands



1. Apple
2. Google
3. IBM
4. McDonald's
5. Microsoft
6. Coca-Cola
7. AT&T
8. Marlboro
9. China Mobile
10. GE

In compiling its United States Reputation Quotient survey, Harris Interactive asked 30,000 people to rank 60 companies based on 20 attributes such as financial performance and social responsibility.

Tech companies dominated the list, with Google coming in first. Apple ranked fifth, continuing the steady rise it began in 2002, according to Harris Interactive. The survey also found that the view of the technology sector as a whole is strong, with 75% giving the sector a positive ranking. (For comparison, retail was the No. 2 sector, with a 57% positive ranking.) Facebook made this list for the first time, too, appearing at No. 31.

TOP 10 Most REPUTABLE Companies In The United States

1. Google
2. Johnson & Johnson
3. 3M
4. Berkshire Hathaway
5. Apple
6. Intel
7. Kraft Foods
8. Amazon.com
9. The Walt Disney Co.
10. General Mills



New Software Accounts For Half Of IT Budgets

According to survey data from Forrester Research, 2011 will mark the first time that companies will spend as much money on new software initiatives as on maintenance of ongoing operations. Two-thirds of respondents list modernization of legacy apps and version updating of packaged applications as high or critical priorities, and increased usage of business intelligence and decision-support tools and services is also high on the list. Traditional licensing dropped from 82% of licensing budgets in 2008 to 71% this year, while subscriptions and pay-per-use increased from 18% to 29%. Nearly half (47%) of respondents plan to develop custom mobile apps. Additionally, SaaS will grow to 37% in 2011 and surpass 50% next year, Forrester says.

Q1 Disk Storage Revenues Approach \$7.5 Billion

In its "Worldwide Quarterly Disk Storage System Tracker" report, IDC says that the total disk storage system market grew to almost \$7.5 billion in revenues for the quarter, which is a 12.1% gain from Q1 2010. Total disk storage systems capacity shipped hit 4,956 petabytes, a 46.3% year-over-year gain. Revenue from global external disk storage systems grew 13.2% year-over-year to total nearly \$5.6 billion for Q1 2011, IDC reports. Vendor-wise, EMC led the external disk storage system market with a 27.3% revenue share for the quarter. NetApp followed at 13.5% and IBM at 12.2%. Additionally, the separate open networked disk storage market total climbed 17.3% year-over-year for Q1 2011 to \$4.7 billion.

Android Sits Atop U.S. Smartphone Market

According to a comScore MobiLens survey of more than 30,000 U.S. mobile phone subscribers, Samsung devices led the mobile phone market in Q1 2011 (ending in April) with a 24.5% market share, followed by LG (20.8%), Motorola (15.6%), Apple (8.3%), and RIM (8.2%). In the smartphone platform arena, Google's Android was at the top of the heap with a 36.4% share (up 5.2%). comScore performed the survey in an effort to detect key trends in the U.S. mobile phone market. Overall, it found that 234 million Americans aged 13 or older used mobile devices during the period, with 74.6 million people owning smartphones (up 13% from the previous quarter ending in January). comScore also found that in April, 68.8% of U.S. mobile subscribers used text messaging on their device, 39.1% used browsers (up 2.1%), and 37.8% downloaded apps (up 2.4%). Platform-wise, Apple's iOS trailed Android with a 26% market share, with RIM (25.7%), Microsoft (6.7%), and Palm (2.6%) following.



Sony Breach Reveals Weak Passwords

An analysis of the user data released following the high-profile security breaches of various Sony Web sites and networks, including its PlayStation Network and SonyPictures.com, indicates that very few of Sony's users are using strong passwords. About half of the passwords gleaned from the Sony Pictures site consisted of fewer than eight characters, only 4% used more than three character-types, and almost none used non-alphanumeric characters. In addition, about two-thirds of the site's users reuse their passwords on other Web sites. While few used the top easy-to-guess passwords (think 123456 or password), about

36% of the people used words that actually appeared in the dictionary, meaning that they would be susceptible to fairly low-tech, brute force "dictionary attacks."

Healthcare Industry Boom

A new report from PricewaterhouseCoopers predicts impressive growth in the healthcare industry. By 2019, PwC says healthcare spending will account for about 20% of the U.S. gross domestic product. Almost a third of all American adults have had, currently hold, or are seeking jobs in the healthcare industry. In the nearly two decades since 1990, healthcare jobs surged 65%, but the rest of the job market enjoyed a mere 16% growth. Three-quarters of Fortune 50 companies are either in the healthcare industry or have health divisions. The report highlights several driving forces behind the healthcare boom, including a massive increase in healthcare data, the proportional necessity to analyze and manage that data, and new government spending and regulations.

Filings Show Long-Standing Microsoft & Nvidia Deal

Newly discovered SEC filings reveal that, should a third party propose to purchase 30% or more of Nvidia's common shares, Microsoft has the first and last rights of refusal. The deal between the software giant and the graphics chip maker dates back to Microsoft's first Xbox gaming console, now a decade old, which used Nvidia graphics. Microsoft has since terminated its contract with Nvidia for Xbox graphics chips, but the shares acquisition deal is still valid. Nvidia drew attention to the pact in its latest quarterly earnings report by notifying investors that any potential acquisition, hostile or otherwise, might run afoul of Nvidia's old deal with Microsoft.

Ethernet Switch Vendors Have "Difficult" Quarter

Aggressive port pricing and weakening demand in North America and Europe meant the first quarter of this year was difficult for Ethernet switch vendors, according to research firm Canalsys. During the quarter, revenue was down 8.8% year-over-year and 12.3% from the previous quarter. North America suffered the biggest hit, with Ethernet switch revenue dropping 13.3% year-over-year, due in part to a decline in federal government spending. The EMEA region dropped 6.7%, Asia-Pacific fell 3.7%, and Latin America was down 1.4%. The one bright spot in the market was 10Gb port shipments, which were up about 70% from the same period last year. Canalsys Director of Enterprise Services Matthew Ball says we could see a wave of merger and acquisition activity among smaller switch vendors.

Cisco Makes Networking Predictions

By 2015, the number of network-connected devices will reach 15 billion—twice the world's population—and global Internet traffic will quadruple to reach 966 exabytes a year. Those are among the predictions Cisco made in its fifth annual Visual Networking Index Forecast. Cisco notes that the massive increase in Internet traffic is being driven in part by the proliferation of tablets, mobile phones, connected appliances, and other smart machines. In addition, Cisco predicts that by 2015, more than 3 billion people, or about 40% of the world's population, will be using the Internet. Faster broadband speeds approaching 28Mbps and more video will also contribute to the growth.

Chinese Newspaper Blasts Google

The People's Daily, the Chinese Communist Party's official newspaper, printed an editorial in response to Google's accusations that Chinese hackers tried to access the Gmail accounts of hundreds of influential users. The front-page editorial in the paper's international editions said that Google's claims are false and are meant to cause problems between the Chinese and American governments. Google says the hackers used spearphishing techniques to try to access the Gmail accounts of American government officials, journalists, military personnel, Chinese political activists, and officials in several Asian countries. American officials said they believed that no confidential information was compromised due to the attacks.

Cloud Tracking Poll Shows Disinterest In Public Clouds

CDW's 2011 Cloud Computing Tracking Poll found that only 7% of respondents say that they'd most likely use public cloud services for their first ventures into cloud computing, while 47% say that a private cloud would be their first pick. The report was based on a survey of 1,200 IT professionals. When asked about their biggest concerns with public clouds, 41% of respondents named security and 40% specified cost as their biggest issues. Another 26% believe that privacy and compliance were big problems. That

being said, cloud users projected that in two years of use, they could save up to 22% of the company's IT budget by using cloud resources and applications.

Government Still Wary Of Cloud

According to a recent survey from Ovum, government agencies are skeptical of the benefits of cloud computing. Of the government CIOs polled in the United States, 46% do not believe that cloud computing will save their respective agencies enough money to make the process worthwhile. Interestingly, this concern varies worldwide—only 29% conveyed concern in the Asia-Pacific region,



yet 49% of European CIOs expressed concern. The survey revealed that a reason for such skepticism is the possible loss of control over business functions when using a third-party cloud provider—68% cited this as a reason not to move to the cloud.

IT Being Bypassed On Cloud Adoption

According to a survey performed by Kelton Research and sponsored by Avanade, many business executives are bypassing IT when it comes to adopting cloud services. The survey looked at cloud adoption practices of 573 participants, which included C-level executives and business unit leaders. About 20% of respondents said they had gone around their IT departments when provisioning cloud services; of those, 61% indicated that it was easier to provision the cloud services themselves and 50% said that it would take too long to go through IT to provision the cloud. Oddly, 60% of respondents said that their companies have corporate policies in place that prohibit executives from bypassing IT in the decision-making process, but that the policies weren't really seen as deterrents for them.

IT Spending By SMBs Surges Back

IT spending by SMBs seems to be moving toward recovery from the recession: According to a forecast by IDC, small and midsized businesses will spend upwards of \$125 billion in 2011 on technology, up from \$120 billion in 2010. SMBs

typically took a harder hit from the recession than larger firms, leading to greatly reduced IT spending. IDC's forecast also predicts that notebooks will be in higher demand than desktop PCs, with 4.7 million SMBs expected to be using notebooks by 2015. It also predicts that there will be in excess of 4.5 million SMBs with LANs by 2015.



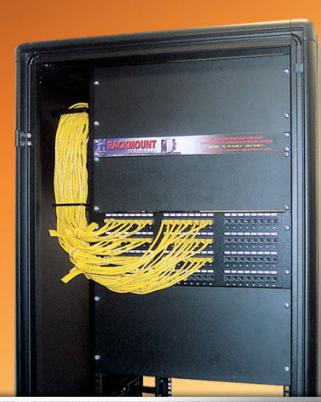
Free Press Files Suit Against Verizon Over Tethering

In a complaint filed with the FCC, Free Press alleges that Verizon Wireless is violating FCC regulations by preventing tethering on Android phones. Tethering is the technique of using one's smartphone to create a wireless hotspot and utilizing the phone's data plan. Free Press asserts that Verizon has pushed Google to block third-party tethering apps in its Android Market, which is in violation of the FCC net neutrality rules Verizon agreed to when it won a chunk of the 700MHz spectrum at a cost of \$4.7 billion in 2008.

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PRODUCT RELEASES

The Processor Product Releases section includes brief overviews of data center products.

All products listed have been released recently, so use this section to get up-to-date with what's new on the market and to find products you need.

Manufacturers:
Do you have a new product that data center/IT managers would be interested in learning about?
Send your press release or product information to press@processor.com.

PHYSICAL INFRASTRUCTURE

■ Aten KN1000 KVM Over The Net

Aten's one-box KN1000 KVM Over The NET provides "over-IP" capabilities to servers or KVM switches that don't have built-in over-IP functionality. With the KN1000, users can monitor and access their computers from remote locations and perform BIOS-level troubleshooting. A built-in single-port Power Switch allows remote power management of devices connected to the KN1000.

■ Black Box F3X Fiber Fault Finder Gun

Black Box says that its new point-and-shoot F3X Fiber Fault Finder Gun can pinpoint cabling faults—including leaks, breaks, and bends—to within inches, saving hours of network downtime and thousands of dollars in lost productivity. The F3X finds faults and fractures in indoor and outdoor cable and works in bright daylight.

■ CommScope, Rittal InstaPATCH ZERO

The InstaPATCH ZERO server enclosure from CommScope and Rittal is the first pre-terminated one on the market. The InstaPATCH is ready for "roll-in and plug-in" deployment ease. The 600mm-wide unit has pre-terminated cabling cassettes that require no additional space in vertical racks, and there's a 4U mini-rack mounted above the cabinet for copper and fiber connectivity in an integrated, modular system.

■ Matrox Avio

The Avio series of fiber-optic KVM extenders from Matrox can be upgraded to support a system up to 1km away. Closer together, the Avio solutions support single displays up to 2,560 x 2,400 (60Hz) or dual 1,920 x 1,080 monitors. Matrox expects to release the Avio series products before the end of this year.

■ Raritan dcTrack DCIM Release 2.5

Raritan introduced new DCIM (data center infrastructure management) tools to help managers find available space, power, and network connectivity within their data centers in order to add or change IT equipment. An intelligent Capacity Search, Reserve, and Place tool helps you quickly find space, power, and network connectivity for IT devices and lets you reserve space for future provisioning or use a Best Fit Options feature to reserve or place equipment.

■ Siemon VersaPOD 600mm Data Center Server Cabinet

Siemon added a cabinet that's 600mm (24 inches) wide to its VersaPOD series of data center cabinets and racks. Designed for server applications that don't require OU vertical patching, the cabinet offers quick assembly and contoured, perforated doors that the company says deliver 71% airflow. The cabinet features an open floor design and multiple roof entry points and comes in 40-inch and 48-inch depths.

NETWORKING & VPN

■ Black Box SmartPath Enterprise Wireless

Black Box announced its SmartPath Enterprise Wireless system, which is designed to combine the speed and security of a wired network with the versatility of a wireless network. SmartPath access points are cost-effective and scalable, require no expensive controllers, support video and VoIP communications, and can manage network traffic intelligently.

■ Dell Virtual Lab

Dell announced additions to its portfolio of virtualization solutions, including version 2.0 of Dell Virtual Lab. Virtual Lab 2.0 is designed for universities and colleges and features validation testing on six popular applications to ensure access to secure, lab-based software virtually anytime, anywhere and from any device.

■ EMC Proven For Citrix XenDesktop

EMC announced EMC Proven for Citrix XenDesktop, a tool designed to accelerate the adoption of virtual desktop infrastructures. Built on the EMC VNX unified storage systems, EMC Proven features high performance and availability for up to 1,000 virtual desktops and expandability to thousands of virtual desktops.

■ HP IT Performance Suite

HP announced its IT Performance Suite for Instant-On Enterprise. The suite features a new IT Executive Scorecard that helps IT personnel manage security and application development as well as financial planning and administration. The IT Performance Suite supports ITIL standards and includes a total of 150 KPIs.

■ HP Virtualization Portfolio

HP announced additions to its desktop-to-data-center virtualization portfolio, including the HP t5335z and t5565z Smart Clients, HP 6360t Mobile Thin Client, and HP Client Virtualization Enterprise Reference Architecture with Citrix XenDesktop and Microsoft Hyper-V. The solutions offer users improved flexibility, security, and productivity.

■ IBM Cloud-Based Education & Research Offerings

IBM announced a handful of cloud-based services for students and researchers. The IBM SmartCloud for Education uses predictive analytics to generate real-time feedback on student and institutional performance. Other new offerings include Decision Management for Education and IBM Cloud Offerings for Virtual Computing Lab.

■ Ipswich WhatsUp Gold Premium v15

Ipswitch WhatsUp Gold v15 network management software comes with a host of upgrades and new features to help you master your enterprise or SMB network. Its new Layer 2 discovery and maps are available from the Discovery Console.



The Web interface makes report searches take less time with a new task-oriented navigation setup and console functions built right in. WhatsUp Gold Flow Monitor has a new Flow Configuration Wizard with automatic router detection and setup, plus the ability to aggregate flows from multiple devices. WhatsUp Gold WhatsVirtual's Dynamic LiveMaps tracks virtual to physical device associations in real time. For more on this product, see page 23.

■ LG-Ericsson iPECS ES-1008G, ES-1016G & ES-1024G

LG-Ericsson USA announced three new iPECS switches, including the eight-port

iPECS ES-1008G, 16-port ES-1016G, and 24-port ES-1024G Gigabit unmanaged Ethernet switches. The switches connect to any network that uses a mix of auto-negotiation to choose optimum speed, duplex for each link, and auto MDI-MDIIX to eliminate crossover cables. Each switch port provides up to 2Gbps bandwidth in full-duplex mode.

■ Marathon Technologies everRun MX 6.1

Marathon Technologies released version 6.1 of its flagship everRun MX product line. everRun MX joins the physical resources of two standard Windows servers into one environment. It is typically used in process automation, distribution, manufacturing, media, gaming, and other areas that can't have unplanned downtime. Marathon touts everRun MX as the industry's first software-based fault-tolerant solution for SMP (symmetric multiprocessing) and multicore servers and applications. The new version includes enhanced scalability and support for more protected virtual machines; more server coverage and compatibility; new platform-specific management applications; better networking, disk I/O, and shared storage performance; and additional OS and server pack support.

■ Napatech NT40E2-1 Intelligent Network Adapter

Napatech announced the release of its NT40E2-1 intelligent network adapter, a 40 Gigabit Ethernet adapter that's capable of full packet capture of 40Gbps burst traffic with zero packet loss. Napatech's 40GbE adapter is a high-performance adapter aimed



at meeting the increasing bandwidth demands of real-time network monitoring, analysis, and security applications. Features include frame decoding, intelligent flow detection, and support for distribution to up to 32 CPU cores, which can accelerate network appliance performance. Organizations looking for highly accurate latency measurements will also appreciate the NT40E2-1's nanosecond-precision time stamping and synchronization capabilities. For more on this product, see page 23.

■ Napatech Software Suite

Napatech has announced the release of its new Napatech Software Suite that streamlines the management of multiport, multi-application appliances. Primary features include data merging from various ports, support for high port density appliances, and plug-and-play support for 1GbE and 10GbE port merging. Napatech says its solution eliminates the need for load-balancing devices.

■ NEI Update Service

NEI has announced a new advanced Update Service that aims to more effectively manage enterprise application and OS software updates covering physical, virtual, and cloud deployments. Based on NEI's patented digital fingerprinting technology, the service gives application technology providers quick and automated management, efficient image control, reduced support costs, and increased reliability.

■ Network Instruments GigaStor

Network Instruments announced that it has improved performance aspects of its GigaStor retrospective network analysis appliance. IT staff can now capture and store full-duplex 10GbE traffic on disk. Other features include faster processing, thanks to dual six-core processors, advanced RAID controllers, and new SAS backplanes; added RAM; and greater power reliability.

■ PHD Virtual Technologies Virtual Monitor for Citrix XenServer

PHD Virtual Technologies' PHD Virtual Monitor for Citrix XenServer is part of a portfolio of monitoring products designed for virtualization environments. PHD Virtual Monitor provides easy end-to-end monitoring and reporting across all levels, including physical, virtual, and application. PHD Virtual intends to support additional platforms, such as Citrix XenDesktop and Citrix XenApp, in the future. Current customers can acquire the Virtual Monitor through the PHD Virtual Early Access Program.

■ RingCube Technologies vDesk v4.0

RingCube Technologies has unveiled vDesk v4.0 for virtual desktops. vDesk v4.0 is a workspace virtualization solution that delivers low-cost VDI personalization of virtualized desktops. It expands an organization's VDI user base, enables faster and more efficient VDI deployments, reduces VDI challenges and infrastructure costs, and increases VDI's return on investment.

■ Skybot Scheduler 2.0

Skybot Scheduler from Skybot Software continues to add to its impressive job scheduling functionality, which already includes reactive and event-driven



scheduling, an intuitive dashboard, cross-system monitoring, job history data, and auditing features. Version 2.0 adds support for running Microsoft SQL jobs. The portable, Java-based software supports Windows, Linux, and Unix operating systems. For more on this product, see page 23.

■ SolarWinds User Device Tracker

SolarWinds introduced the SolarWinds User Device Tracker, a network management utility that lets users determine the current and past whereabouts of network devices. The SolarWinds User Device Tracker is capable of searching with an IP address, Hostname, or MAC address. Users can confirm a device's current location and the location history of currently connected and unconnected devices. In addition, User Device Tracker can notify users when a device on a watch list connects to the network in the future.

■ Supermicro SSE-X24S & SSE-S24SR

Supermicro announced its new SSE-X24S 10Gb Ethernet switch. The standard

PRODUCT RELEASES

version of the switch takes up just 1U of rack space and features 24x SFP+ 10GbE ports and redundant, hot-swappable power supplies. The SSE-X24SR is similar but features reverse airflow technology and is designed with data centers in mind, providing better cooling in the back of a rack.

STORAGE

Atempo Digital Archive

Atempo released the ADA (Atempo Digital Archive), which is integrated with the API for the Dell DX Object Storage Platform, making it possible to manage and secure data volumes. ADA migrates information to the DX Object Storage Platform to make room available for principal storage assets. The solution automatically organizes data using its hierarchical storage management capabilities, and because it's metadata-aware, users can better understand the content and context of data. Other features include a simple end-user interface and centralized administration.

ATTO Technology Celerity HBAs With Multipath Director

ATTO Technology announced that the combination of its Multipath Director technology with its Celerity 8Gbps Fibre Channel Host Bus Adapters lets enterprises bridge the gap between Mac environments and HP's G3FC Modular Smart Array storage system. The company says that its line of Celerity HBAs with Multipath Director technology gives digital media professionals a feature-rich shared storage option.

Iomega StorCenter PX Series

Iomega announced the release of Iomega StorCenter PX Series network storage

products designed for small to medium-sized businesses. The StorCenter PX Series appliances are easy to set up, simple to manage, and range from diskless with no included storage to up to 18TB of storage capacity. The new appliances also feature Iomega Personal Cloud technology, which lets users protect and share data from virtually anywhere. The Iomega Desktop StorCenter px4-300d and px6-300d feature four HDD bays and up to 12TB of storage and six HDD bays and up to 18TB of storage capacity, respectively. The Rack-mount StorCenter px4-300r Network Storage Array supports up to 12TB of storage capacity in a 1U form factor.

Micron RealSSD P320h SSDs

Micron introduced the RealSSD P320h Series of solid-state drives, which features PCI-E connectivity and 34nm single-level cell NAND flash chips. The new SSDs are ideally suited to the demands of data-intensive applications, including cloud computing, high-performance computing, data analytics, business intelligence, and video on demand. The RealSSD P320h Series SSDs are available in 350GB and 700GB capacities.

NetApp SnapProtect Management Software

NetApp announced its SnapProtect management software, a tool that adds to the company's portfolio of Integrated Data Protection backup and recovery products. Features of the software include high-speed NetApp Snapshot copies and replication in tandem with tape backup, all in a single solution that's designed to improve speed, efficiency, and simplicity.

NovaStor NovaBACKUP Remote Workforce 12.1

NovaStor announced version 12.1 of its NovaBACKUP Remote Workforce private cloud platform for backing up workstations, servers, and stored data while on the road. Designed to back up and restore distributed company data more efficiently, version 12.1's features include central management, the ability to restore single mailboxes, and easy-to-use wizards that allow users to recover data from a simple user interface on a centralized Web page. The time it takes for backup jobs to finish has been reduced dramatically, from more than an hour to around five minutes; additionally, transfer of mobile and remote data now uses less cache space, further reducing the load on the system during the operation.

RaidAge gAGE104U40SL-SAUF

RaidAge powered by iStarUSA has released the gAGE104U40SL-SAUF, a 1U desktop-type trayless storage appliance with a built-in hardware RAID controller. The gAGE104U40SL-SAUF offers plug-and-play support; eSATA, USB 3.0, and



FireWire 400/800 interface options; and bays for installing up to four hot-swappable, 3.5-inch 6Gbps SATA I/II/III drives for up to 3TB of storage. Measuring 19 x 1.7 x 11.5 inches, the aluminum-constructed enclosure features tool-less and screwless installation and supports RAID 0, 1, 3, 5, 10, Combine,

and JBOD (clear mode) levels. The Mac- and Windows-compatible enclosure, which supports transfer speeds reaching up to 300MBps, includes multifunction LED indicators and three 40mm fans for silent cooling. For more on this product, see page 41.

Sepaton S2100-DS3 Series 1000 & 2000

The S2100-DS3 1000 and 2000 systems from Sepaton extend data backup protection to remote offices, all controllable from a central enterprise location. They have deduplication, compression, high-performance, and high-reliability features. The solutions will initially be available in 10TB or 20TB capacities in a 2U form factor, with pricing starting at \$110,000.

Texas Memory Systems RamSan-710

Texas Memory Systems released the RamSan-710, a 1U rackmount 5GBps shared storage system that offers maximum performance with minimum power and space requirements. The 710 includes a new Series-7 Flash Controller with Toshiba 32nm SLC flash memory, four 8Gb Fibre Channel or QDR InfiniBand ports, 21 flash boards, two high-bandwidth I/O modules, and VSR (Variable Stripe RAID) technology.

SECURITY

Entrust IdentityGuard 10.0

Version 10.0 of Entrust's IdentityGuard authentication software is designed to provide physical, logical, and mobile access security in a single platform. It integrates the management of smart cards and certificates in order to simplify card issuance by

Go to Page 8

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PRODUCT RELEASES

Continued from Page 7

businesses that are increasingly deploying secure mobile gear. New in version 10.0 is certificate-based enrollment and mobile device authentication. Users can access the Entrust IdentityGuard Self Service Module to register a mobile device and download a digital ID to it all on their own. The software comes integrated with Entrust On Premises or Managed Services PKI.

■ nCircle Benchmark Premium Edition Metrics Pack

nCircle announced the release of the Premium Edition of its nCircle Benchmark Antivirus and Endpoint Protection Metrics Pack, a cloud-based security and compliance benchmarking service that enables organizations to compare the performance of their IT security against both their peers and their own in-house goals. Based on the free Basic Edition, metrics are driven from facts and data acquired from installed security solutions such as McAfee ePolicy Orchestrator and Symantec Endpoint Protection. The Premium Edition adds more metrics, the ability to compare results to peers, custom assessments, the ability to manage asset groups according to user criteria, and configurable control monitoring alerts.

■ nCircle Configuration Compliance Manager 5.10

nCircle unveiled the latest version of its Configuration Compliance Manager. Version 5.10 supports new configuration auditing scan modules and policies, a centralized Scan Task Manager, and new supportability tools. In addition, it can integrate with Cyber-Ark's Privileged

Identity Management Suite. The offering has 10 new CIS policies, 54 CIS-certified policies, and more than 120 total policies.

■ Stonesoft Anti-Evasion Readiness Test

Stonesoft announces its new Anti-Evasion Readiness Test, which uses Stonesoft's StoneGate evasion testing software to let companies know how well prepared they are to protect themselves from advanced evasion techniques. It's designed to show the level of protection for sensitive information within the company and shows potential vulnerabilities that may be present.

MESSAGING & TELEPHONY

■ Red Earth Policy Patrol Archiver

Red Earth's Policy Patrol Archiver lets companies archive Microsoft Exchange emails and search through e-discovery features. Policy Patrol Archiver, targeted at small to midsized businesses, can be set to automatically archive email as soon as it is sent or received and store it in a central location, helping to meet compliance needs, reduce storage size, and boost Exchange performance.

SERVERS

■ Supermicro MicroCloud Servers & SuperServers

Supermicro announced the release of its MicroCloud server and two additions to its SuperServer line. The Supermicro MicroCloud 5037MC-H8TRF features eight or 16 hot-pluggable nodes and 16 hot-swappable hard drives; each node supports an Intel Xeon processor and a PCI-E 2.0 x8 expansion slot. Supermicro also added

two 4-GPU enterprise SuperServers, the 1U Multi-GPU SuperServer 1026GT-TRF-FM307 and 2U Multi-GPU SuperServer 2026GT-TRF-FM407, that are designed to be powerful yet green, with efficient power supplies and optimized cooling designs.

CLIENTS

■ Dell Latitude E6420 XFR & Latitude E6420 ATG

Dell announced two new rugged laptop computers, the Latitude E6420 XFR and the Latitude E6420 ATG, both of which feature Intel Core i3, i5, or i7 processors. The XFR has a sunlight-readable wide-screen 14-inch LCD and a 6-cell battery with a 12-cell slice, while the ATG has a 14-inch HD WLED touchscreen display and a 6- or 9-cell battery with an E-slice.

■ Dell OptiPlex FX170 & FX130

The FX170 and FX130 thin clients from Dell feature seamless connectivity for organizations that have or plan to have a desktop virtualization infrastructure. The FX170 is ideal for multimedia and content creation, while the FX130 is targeted toward application- and task-based environments. Both are fanless systems with no moving parts and allow IT to centrally manage their data and images in the data center.

■ Eizo DuraVision FDX1501 & FDX1501T

Eizo announced two 15-inch monitors that will be released in July: the DuraVision FDX1501 and the FDX1501T. The main difference between the two models is that the FDX1501T features an analog-resistant touch display and can support 32-bit Windows operating systems. Both

the FDX1501 and FDX1501T are LED-backlit and have 1,024 x 768 resolutions. They have D-Sub mini 15-pin analog and DVI-D 24-pin digital inputs. Both monitors are available in four different styles: panel mount, chassis, VESA mount, and standard. The standard and VESA-mount versions also have built-in speakers.

■ The Fedora Project Fedora 15

The Fedora Project announced its Fedora 15 release, which is the latest version of its free open-source operating system distribution. New features in Fedora 15 include GNOME 3 Desktop that moves from CORBA-based technologies to D-Bus-based successors and a BoxGrinder set of tools for making appliances or for use in a cloud environment.

■ Motion Computing Motion CL900

Motion Computing launched the Motion CL900, a small-form-factor rugged tablet PC designed for productivity and business integration. Features include a 10.1-inch touch-and stylus-sensitive display, Intel Atom Z670 Series processor, and Windows 7 operating system. The Motion CL900 starts at \$899.

■ Oracle Retail Merchandising Analytics

Oracle has released the Oracle Retail Merchandising Analytics solution for enterprises, which is designed for accessing and analyzing data from multiple applications, including financial and workforce management and CRM. It features pre-built integration with several Oracle solutions, including Oracle Retail Merchandise Financial Planning, Retail Invoice Matching, Retail Price Management, and Retail Sales Audit.

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In addition to MovinCool's reputation for performance and reliability, Steding was impressed by the CM25's high sensible cooling capacity of 18,900 Btu/h, its seasonal energy efficiency ratio (SEER) of 14 and its compact dimensions. Sitting just 20 inches high, it easily fit into the ceiling space above the data room. "The CM25 has all the features we need — plus an affordable price."

To read more about Matt's MovinCool success, visit: www.movincool.com/allina



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IT Healthcare Market Poised For Growth

The U.S. healthcare IT market is expected to grow at a compound annual growth rate of about 24% between 2012 and 2014, according to analysis and market research firm RNCOS. In its report, "U.S. Healthcare IT Market Analysis," RNCOS states that, because of rapid progress in the past few years, the U.S. healthcare industry will grow to \$40 billion by the end of this year.

The RNCOS report divides the healthcare IT market into three areas: IT hardware, IT software, and IT services. Last year, hardware took the lion's share of the market with 65%, followed by IT software and IT services. However, this share will likely soon drop to around 58%. This is due in large part to the government offering incentives to doctors and hospitals to improve their IT solutions, according to Shushmul Maheshwari, CEO of RNCOS, who says intensifying competition and surging demand are driving prices down. Industry consolidation is also a major factor.



Rural Growth

The rural market is one group proving significant to the development of the healthcare industry, RNCOS says. That market is known to have a huge customer base and to be largely untouched. Seeing this, companies and the federal government are pouring in money, Maheshwari says.

Electronic health records, one of the major components of the healthcare IT industry, will also be a major revenue producer in the next few years, according to the study. The American Recovery and Reinvestment Act of 2009 provides incentives for the medical profession to use EHRs, resulting in increased demand and boosting the market for software in the healthcare industry. In the United States, software revenue forecast is expected to jump from \$6.8 billion in 2010 to \$8.2 billion this year. The increased adoption of smartphones is furthering the clamor for healthcare apps and pushing growth in the software market.

In the services sector, mobile health, or m-Health, is expected to emerge as one of the fastest growing mobile communications and network technologies for health care. A poll by Harris Interactive shows 78% of those surveyed expressing interest in m-Health products and services, with estimates showing its revenue improving 17% between 2010 and 2011. RNCOS estimates show 72% of physicians are using these apps currently on their smartphones, and that 20% of U.S. physicians own an iPad. Overall, the m-Health market in the United States is expected to grow 22% from 2012 to 2014, according to RNCOS.

Maheshwari says all these factors—increased development of the rural market, consolidation, the availability of more affordable healthcare options, and increased demand—will pave the way for growth.

by Patrick Kean

ESD Dangers On The Rise

Electrostatic Discharge Can Have Shocking Effects On Data Center Equipment

by Carmi Levy

• • •

STATIC ELECTRICITY is often a child's first introduction to hard science: Shuffle along the carpet in sock-covered feet, touch a metal object, and watch the sparks fly.

Key Points

- Increasingly ESD-aware IT professionals will almost triple their spending on related products by 2015.
- Shrinking components make hardware more susceptible to static-related damage.
- Improved materials, such as conductive polymers and nanomaterials, are making it easier for vendors to protect formerly at-risk components.

To a data center manager, however, electronic static discharge, or ESD, is anything but child's play. As hardware continues its relentless advance toward increasingly dense, temperature-critical components, ESD is emerging as a significant threat to data center operations.

The risk has always been around to a certain extent, and IT professionals have always known to follow best practices when working on sensitive hardware. Consequently, the market for ESD products is relatively mature, and most IT shops are thoroughly bought into the need.

Recent trends in hardware designs, however, have amplified the issue somewhat. Newer hardware, by virtue of its shrinking component size, can be especially vulnerable—for example, static discharges that might have barely affected older technologies can bring an unprotected, smaller, higher-capacity hard drive to its knees.

The Anti-ESD Market

A recently published report from NanoMarkets, a firm that tracks advanced materials trends in electronics and energy markets, concludes that the semiconductor industry's drive toward smaller, more highly integrated board-level and drive components is raising the profile of—and demand for—products that protect against ESD.

The report says the market for ESD products within the electronics industry will hit \$480 million by 2015. By that same year, demand for ESD-protected bags and boxes is expected to almost double, to \$940 million. Data centers, whose exposure to the issue derives largely from service calls that require equipment to be opened up for repair or maintenance, will almost triple their spending on ESD products to more than \$100 million. Within that same timeframe, the market for anti-ESD products as a whole will expand to \$8

PHYSICAL INFRASTRUCTURE

and processes are well entrenched in the industry, and none of this is particularly new to vendors or IT pros alike.

"If you are swapping drives, you want to store them long term in an ESD-protected box or bag," he says. "[This is] even more important for chips and board-level components. But I think most—though certainly not all—companies already know this and do an adequate job. Vendors are also aware of ESD issues and do a pretty good job of designing their products to be ESD-resistant."

Mike Bullock, lead engineer for Rackmount Solutions (www.rackmountsolutions.net), says good anti-ESD planning within the data center starts at the design stage. His recommendations include the following:

Remember to ground. "Each piece of installed equipment should be grounded," Bullock says. "We very often provide a bus bar so that the customer can tie each box to a common ground point. The bar is then grounded to the customer's ground plane." Bullock says this can be either a common or isolated ground plane, depending on specific customer need.

Don't forget ground studs. "Ideally, any removable part of the cabinet, which commonly include doors, top, and sides, should have a ground stud," Bullock says. "If the frame is bonded to the bus bar, then the cabinet items can be wired from their ground stud to the frame. If the bus bar is isolated, they may want to ground the frame separately to their ground plane."

Although heightened awareness is always a good thing, IT should not necessarily be expecting any radical changes on the anti-ESD front.

IT and electronics manufacturers aren't alone in ESD concerns, either, as ESD awareness increasingly applies to other sectors, including automotive, construction, and logistics. ESD solution providers are helping meet the need with new generations of conductive polymers and nanomaterials that make more tightly packed system boards, for example, feasible in ways that would not have been possible just a few years ago.

According to NanoMarkets, "Any semiconductor firms that fail to upgrade their ESD strategies for shrinking circuits will watch their yields drop through the floor."

Action Plan

Jack Gold, founder and principal analyst at J.Gold Associates, says IT has no reason to panic. Anti-ESD products

Plate it. Bullock says that in certain deployments, the design requirements call for the rails to be plated and the frame masked at the points where the rails mount.

Keep On Keeping On

Although heightened awareness is always a good thing, Gold says IT should not necessarily be expecting any radical changes on the anti-ESD front.

"I'd say that for most data centers, it will be business as usual despite the newer, smaller components," Gold explains. "The key issue will be buying well-designed products to begin with that aren't overly susceptible to ESD. That is common practice today and should remain so going forward."

The fact that these common practices, which have governed our data center processes for generations, remain valid today shouldn't come as a shock to anyone. □

What Does Anti-ESD Equipment Look Like?

In a simpler era, hardware technicians wore antistatic bracelets and ensured they were properly grounded anytime they opened up any equipment. According to a NanoMarkets report titled "ESD Products and Materials: Markets and Opportunities," today's solutions focus mostly on a number of high value-added products:

- Dissipative boxes made from carbon-impregnated corrugated or carbon-filled molded materials
- ESD-resistant flooring
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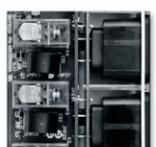
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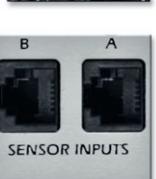
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Study: Outages Cost U.S. Data Centers \$5,600 Per Minute

A Ponemon Institute study analyzing the economic costs of data center outages found that the average cost of an outage was \$505,502 and the average length 90 minutes, for a cost of about \$5,600 per minute. The study is based on analyzing 41 data centers of varying sizes around the country. Of those data centers included in the study, 59% suffered a complete data center outage and 41% had a partial outage.

Ponemon analyzed the direct and indirect costs of outages, including damage to mission-critical data, the impact of downtime on productivity for IT staff and end users, damage to equipment, containment and recovery, legal and regulatory impact, loss of stakeholder confidence, damage to the company's reputation, and lost revenue from missed business opportunities. Business disruption resulted in the greatest costs, followed by lost revenue and end-user productivity.

Among the study's other findings is that total outage cost is linearly related to the duration of the outage and the size of the affected data center. Ponemon also found that IT failure is the most costly cause of outages, and accident/human error is the least expensive.



Reduce The Impact

Larry Ponemon, chairman and founder of the Ponemon Institute, says the majority of data centers in the study consider themselves prepared to respond to an outage. "In reality, I think far fewer companies are prepared," he says, adding that many have a "sense of overconfidence" in their ability to deal with an outage. About two-thirds of companies, he estimates, had a reasonably high probability of experiencing problems during recovery.

Another part of the problem is convincing senior management to give the data center proper resources to prepare for and deal with outages. The best way to do this, Ponemon says, is to conduct an ROI study. This data will show managers that it makes good economic sense to make their data centers more resilient to outages, he says.

When the Ponemon study looked at the root causes of outages, 29% of respondents said UPS system failure; 24% listed accidents or human error; and 15% cited water, heat, or CRAC failure. Only 5% of the failures were attributed to IT equipment failure.

"A lot of the problems in a data center environment are associated with the human factor," Ponemon says. Even if human action is not deliberate or malicious, it could cause an outage or the mismanagement of recovery. "The key there is that good data center management is about having good technology and equipment and about having people that know what to do in an outage," he says.

by Kyle Harpster

Eye On Expansion

Issues To Consider When Data Center Expansion Becomes Necessary

by Christian Perry

• • •

IF A ROUGH ECONOMY has prevented businesses from expanding in the past two years, evidently data center owners didn't hear the news. In fact, a recent study from Digital Realty Trust found that two-thirds of the companies it surveyed have added data center capacity in the past 12 to 24 months, and 85% plan to expand capacity this year. This trend toward more capacity increasingly highlights the need to understand the issues around data center expansion, particularly as companies seek to get the most bang for their expansion buck.

Pushed By Power

According to Brett Femrite, sales manager for Rackmount Solutions (www.rackmountsolutions.net), growth in cloud and mobile computing is causing a spike in data center growth, as is interest in increasing storage capabilities, content and Web traffic, virtualization, and wireless technologies.

so it's no surprise that these are key factors driving enterprises' decision-making processes. Respondents also cited issues like security, virtualization, disaster recovery, new applications, and more square footage as key reasons for expanding."

Experts also point to the consumerization of IT for the recent need for more data center capacity. Eric Kaplan, vice president of engineering for Ahead (www.thinkaheadit.com), notes that IT consumerization prompts end users to ultimately demand instantaneous access to information from any device, regardless of their location. Further, he says that people now analyze and retain information for longer periods of time, in turn sparking more demand for storage and compute resources.

Changing Tide

There once was a time when ping, power, and pipe were all that mattered when it came to data center expansion, says Tom Lusty, systems engineer at CSN Stores. Businesses are still focused on server

"Some of the leading reasons cited by respondents for those expansions are the desire for more power efficiency in their data center facility, as well as more overall power capacity."

- Digital Realty Trust's Steve Flaig

Another heavy contributor to this recent expansion trend is power, because existing data centers that don't have enough of it are swiftly exposed when demand skyrockets.

"Some of the leading reasons cited by respondents for those expansions are the desire for more power efficiency in their data center facility, as well as more overall power capacity," explains Steve Flaig, director of marketing at Digital Realty Trust (www.digitalrealtytrust.com). "In all of our surveys, power issues like these are always at the top or near the top of the reasons cited. Data centers are power-intensive operations,

availability, power for those servers, and adequate bandwidth, but in today's data centers, other factors such as power density, power efficiency, and cooling have become at least as important when dealing with expansion."

"With the consolidation of servers via virtualization and the use of private clouds, you end up consolidating all of that work that many physical servers were doing previously into bigger, more power-hungry machines," Lusty says. "This consolidation of work demands a higher power density per square foot that a lot of data centers these days can't

Address The Issues

Building a data center from scratch might seem like a monumental task, but even that project fails to rival the complexity of an expansion due to integration, consolidation, and other issues. Tom Lusty, systems engineer at CSN Stores, offers the following advice for handling these issues.

- **Do your homework.** Look into your expected growth rate and set the groundwork for future expansion on Day 1 so you're in a good spot to be able to expand faster/more easily the next time. Virtualization technology gets better every day, so consolidate everything possible to reduce the amount of underutilized hardware. This will help slow your physical expansion and make the data center space last longer.
- **Start early.** The sooner you start thinking about how you are going to expand, where, and what, the longer you have to plan and optimize that data center space.
- **Don't miss the little things.** There is a huge amount of small details that make an expansion and a data center run smoother. Don't forget about them while you're focusing on the big things.

Key Points

- Despite the recent sluggish economy, many businesses have expanded their data centers or have plans to do so in the coming year.
- Many factors contribute to the need for expansion, but the need for more power capacity and efficiency ranks near or at the top of the list for most businesses.
- Networking is a crucial concern when expanding a data center due to the increased impact of latency and the varied abilities of carriers to provide solid connectivity.

handle. If you can't fill a rack with servers, it's not a good place to be in."

He recommends understanding your server farm's estimated power requirements and having that information ready to go when you start your data center expansion planning. Lusty also says it's important to consider the network aspect and the concepts of provider quality and diversity. Due to latency's bigger impact on today's networks, businesses need to be closer to their customers. However, not all good carriers have good connectivity into all data centers, Lusty notes, and poor connectivity could push the cost of an expanded data center above the cost of a more expensive data center with more carriers already in the building.

"Companies should also ask about power capacity, volume buying contracts with power providers, energy efficiency certifications, and sustainability," Flaig says. "Power is the lifeblood of every data center, and energy efficiency is important because of how that impacts operational costs. Asking smart questions about these topics will save you a tremendous amount of money, ensure the reliability of your data centers, and better support your company's green policies."

Expand Wisely

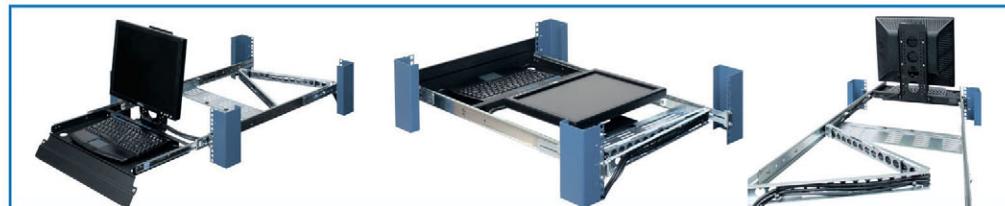
Ahead's Kaplan says that expansion delivers the opportunity to integrate higher levels of automation throughout the data center. Moving forward with an expansion without putting automated systems in place could lead to levels of inefficiencies that drive up costs and slow down IT's ability to quickly meet business needs. Expansions can also get bogged down by decisions concerning existing equipment, but Femrite has some concise advice for this issue: Keep it clean.

"Data centers typically contain equipment that is unused, abandoned, or redundant but sits there on a rack, running and consuming power," Femrite says. "Many companies don't have a clear depiction of what equipment they have, what could be consolidated, and what could simply be turned off and removed. A thorough audit of equipment inventory will alleviate this issue and likely save a few dollars—or more than a few—on power costs." **P**

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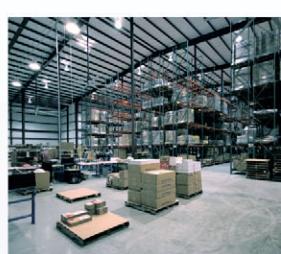
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Key Points

- Although they're currently voluntary in the United States, carbon credits can still be purchased through a greenhouse gas reduction trading platform.
- California plans to implement a carbon cap-and-trade system in 2012, though that plan has been delayed for now by a court ruling.
- Consultants and power utilities can help you determine your data center's carbon footprint and help you plan for the future.

Take Credit For Energy Use

Carbon Credits Are Gaining Ground As Environmental Concerns Rise

by Dan Heilman

Do you know what your data center's carbon footprint is? If not, be aware. Not only might that information be valuable, the day might come soon when you're required to both know it and keep it at a certain level. To that end, carbon credits are a growing force in the green IT arena.

GROWING ACCOUNTABILITY

Data centers, put simply, are energy hogs. According to recent research by James Hamilton, vice president and distinguished engineer at Amazon Web Services (aws.amazon.com), data centers eat up almost 0.3% of the United States' energy usage. The consequences of all that consumption include carbon emissions, which have been shown to contribute significantly to greenhouse gases.

Data center managers are starting to be held accountable for how their machinery affects the environment. The primary ways to be proactive about accountability are by increasing the data center's energy efficiency and by purchasing carbon credits. Carbon credits are tradable certificates representing the right to emit a certain amount of carbon dioxide or its equivalent.

Voluntary carbon credits are referred to as offsets, while mandatory credits are purchased from a state or national agency that has put the carbon mandate in place.

PREPARE FOR REGULATION

Buying carbon credits in the United States is still voluntary because the country doesn't participate in the Kyoto Protocol, which regulates carbon output internationally. Credits can be purchased through such carbon market outlets as the Chicago Climate Exchange (www.chicagoclimateex.com), a voluntary greenhouse gas reduction and offset trading platform.

However, the days of voluntary compliance with carbon protocols for data centers are numbered. California has plans to implement a carbon cap-and-trade system

in 2012, although a recent ruling in San Francisco Superior Court put the plan on hold while officials study other methods of limiting greenhouse gas emissions.

That doesn't mean the day of mandatory carbon limiting for data centers isn't coming, though, says Edward Weisberg, vice president of marketing and business development at consultancy GXT Green. That's especially true for companies with cloud clients located across a wide geographical range.

"If and when [a carbon cap] happens, you'll be obligated to participate if your data center is in California or if you even have clients in California," he says. "That holds true currently if you work with international clients that are regulated by the Kyoto agreement."

Dr. Joe Polastre, CTO of Sentilla (www.sentilla.com), also warns that data center managers need to be ready for regulation. "Today, carbon does not play an impact on the enterprise," he says. "But programs that you put in place today may not meet the carbon regulations that are passed in the future."

Most countries are looking at either a flat tax or cap-and-trade system,

Polastre points out. In either case, the cost impact on enterprises that run their own data centers is expected to be between 4% and 6% of its total electricity usage.

In the meantime, Polastre suggests talking to your utility company to help find ways to track your data center's carbon emissions. "Implement as much metering as possible when building the facility so that you don't have to retrofit after regulation is passed," he says. □

Go Green To Save Green

There is an easy way to reduce your data center's carbon footprint that comes with a nice side benefit: saving money. Kevin McDonald, senior analyst and cloud strategist with tech consultancy ICFI, says energy-efficiency work done on the front end can not only forestall problems when carbon limits become mandatory in the United States, but it can pay financial dividends immediately.

McDonald says that using cheaper alternative energy sources such as wind power can have a dramatic effect on data centers' energy costs, along with running machines at non-peak hours and other methods.

"You can use many of the same methods you might use to reduce your home energy bill," he says. "A lot of it is just common sense."

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BUYING GUIDE



BUYING TIPS:

Cable Management Solutions

by Blaine Flamig

TRADITIONAL DATA CENTER DESIGNS are undergoing a radical physical transformation as more companies turn to space-saving, cost-reducing, and green-influenced plans that accommodate today's equipment but leave wiggle room for tomorrow. A constant in designing any space, however, is choosing the appropriate cable management system for a given situation. The following can help those in charge of the planning select the right cable management system for the present and future.

Cover the basics. The list of considerations for buying cable management products is long. Still, it's important not to overlook the basics. For example, "One of the easiest methods of managing cables is to use cables that are an appropriate length in the first place," says Laura Viars, senior account manager at Rackmount Solutions (www.rackmountsolutions.net).

Additionally, factor in overall cost, ease of use and installation, bend radius,

Buyers' Checklist

- OU to the rescue.** Although horizontal cable management products only take up one or two rack spaces, you still may lack free space to work with. In such cases, Rackmount Solutions' Viars says to consider solutions that can mount on the same holes as your equipment, essentially creating a OU solution.
- Should you DIY?** No matter the management system you choose, you must decide who will install it. Methode's Carter says that, just as in any product category, DIY can be less expensive than paying for professional installation but can end up costing more due to installation issues and ultimate performance of the installed system.
- Measure.** According to Black Box's Dickson, a basic requirement for buying cable management products that sometimes gets overlooked is that the product must be compatible with existing infrastructure. "In other words, measure before ordering," she says.

adaptability to current infrastructure, equipment and workmanship warranties, the impact on heating and cooling, material, durability, and diameter. "Different cables have markedly different diameters, ranging from slim fiber-optic cable to very bulky CAT 6A UTP cable," says Gina Dickson, product manager at Black Box Network Services (www.blackbox.com). "A cable management product that's adequate for fiber cables may not support the same number of UTP cables."

Size up the vendor. Cassie Fyten, sales manager at PDU Cables (www.pducables.com), recommends investigating the reputation and service of the vendor, including whether it provides an easy-to-use method for ordering and helps to eliminate confusion, wrong wire size, cable length, and correct outlets required for server connections. Also, determine how quickly the vendor can deliver its product and whether it has knowledge of power cables and their importance to your business, Fyten says.

Check for accessibility and reusability. Viars considers accessibility and reusability two of the best features a cable management product can possess. This can include products with removable covers or that use Velcro tie wraps instead of plastic ones. Michael Carter, general manager of CTI, a Methode Electronics brand (www.methode.com), says it's important to ask if the product can easily be modified if your infrastructure needs to change.

Don't be afraid to think big. "Today's data centers are very

Key Terms

Bend radius. Kinks or crimps in cabling can have a big effect on cable and network performance. Bend radius indicates the radius of curvature a cable can bend without being damaged. Minimum and maximum radius numbers are typically provided to help maintain proper cabling conditions.

UL Listing. Short for Underwriters Laboratory, the UL is an independent safety certification organization that's tested products and written associated standards for many decades. The standards ensure products won't cause electrical hazards in mission-critical facilities.

high-density compared to data centers of the past and will likely be called upon to accommodate even higher equipment density in the future," Dickson says. Thus, buyers should "plan for future growth by incorporating high-capacity cable management such as ladder racks and basket trays," she says. Viars agrees that expansion is a key consideration. "Whether you are managing a data center or just organizing a single workstation, it can be aggravating having to cut cable ties and re-run wires to accommodate a new addition," she says, so if expansion is a possibility, plan to accommodate that growth. If managing cable in a rack or cabinet, Viars suggests using the space wisely by making sure cables are bundled neatly, using both horizontal and vertical cable managers when necessary. □

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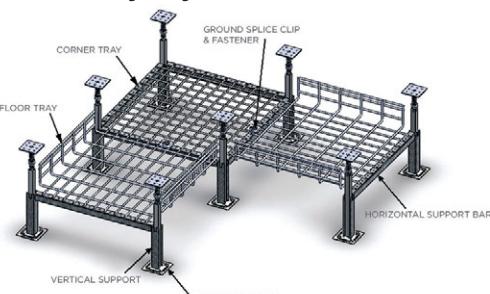
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- Fits all access floor manufacturers' makes and models
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Best For: Data centers, general offices, or any other facility utilizing an access floor, as well as data center renovations and new constructions.

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Product

Information Support Concepts ConnectFloor Modular Computer Floor



Description

The ConnectFloor Modular Computer Floor from Information Support Concepts is a cable management solution designed to provide flexible functionality that is affordable and simple to implement. Similar to Lego building blocks, the company says, you can use the modular pieces to assemble the ideal cable management setup to suit your exact cable-routing needs.

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- Easily reconfigurable and reusable

Best For: IT labs or areas where instant floor cable management is required.

Price: Varies based on square footage; for example, 1 to 3,000 square feet cost \$10.10 per square foot

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iStar ClayTek WA-CM1UB 1U Cable Management Rack Kit



iStar's ClayTek division provides an economical and effective solution for cable clusters. The WA-CM1UB takes up only one unit of space in standard 19-inch racks and enclosures and helps to keep cables organized. Cables can be easily threaded through the panels, and excess wiring can be stored inside the management casting. ClayTek also offers a 2U model, the WA-CM2UB.

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PRODUCT SPOTLIGHT

PHYSICAL INFRASTRUCTURE

Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

Compiled by Blaine Flamig

Management

CTI Quantum Cabling Solution™



CTI's Quantum Cabling Solution is a user-friendly, highly efficient cable management solution that lets users cable a fully loaded enterprise-class director in half the time of traditional cabling methods. The Quantum is highly manageable and improves troubleshooting and move/add/change activities as compared to traditional cabling methods when deployed with TIA-942-compliant solutions. The Quantum Cabling Solution can handle the highest port count hardware on the market while utilizing the least amount of valuable rack space. It's currently available for Brocade and Cisco 9513 enterprise-class directors; additional configurations are available upon request.

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Device Technologies Spring-Fast SL Series Encapsulated Metal Grommet Edging



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Best For: Data centers; telecommunications, equipment rooms, and lab spaces; access floors and underfloor cable management; and racks and chassis.

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PDU Cables UL Listed Power Distribution Cable Assemblies



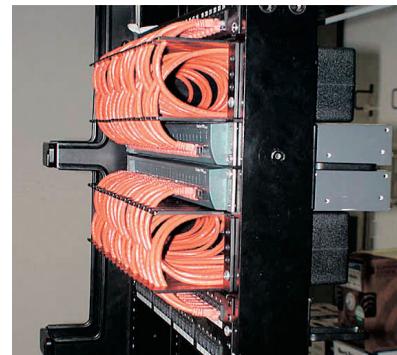
Manufacturer of UL Listed, underfloor power distribution cable assemblies, PDU Cables is fast, reliable, and knowledgeable while remaining cost-effective in providing the industry's highest-quality power cables. Use pre-fabricated, color-coded, and labeled cables to excel in data center cleanliness and organization. UL Listed and Hi-Pot tested, every cable is guaranteed not to fail. PDU Cables provides customers with 24-hour turnaround and standard transit times of one to three days to most U.S. locations (cable expedition available). Currently more than 5,000 data centers use PDU Cables' products to save time and labor and to reduce overall project costs.

- UL Listed and tested power distribution cables
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Best For: Raised floor data center applications.

Contact: (866) 631-4238 | www.pducables.com

Rackmount Solutions Neat Patch Cable Organizer



Tired of messy networks? Place the Rackmount Solutions Neat Patch kit between a switch and a patch panel, and you'll never have another cable mess. We guarantee it!

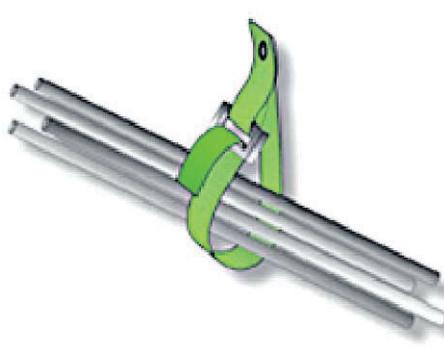
- Promotes bend radius compliance in patch cable management
- Patch cables are easier to trace from panel to electronics
- Priced less than the leading brands of horizontal management
- Uses a patented plastic molded design that is non-conductive. Wire with confidence there will be no electrical issues such as surges and grounding since the plastic fingers are not riveted to metal or metal D-rings.

Best For: Enterprises building a new network or wanting to clean up an existing installation.

Price: Starts at \$59.34

Contact: (866) 207-6631 | www.rackmoundsolutions.net

Rackmount Solutions Rack-ups



The Rack-ups wire management straps from Rackmount Solutions are designed to help manage and safely secure electrical, CATV, and fiber-optic cables. Made from Velcro® hook-and-loop tape, Rack-ups will not cut or pinch cords like plastic ties. The hook-and-loop tape makes it easy to adjust, remove, and/or add cords. These straps have a 0.25-inch brass grommet, so they can be nailed or screwed to equipment racks, brackets, shelving, walls, and ceilings, keeping cords safely out of the way.

- Available in three models: plain, grommet, and buckle
- 0.75- x 9-inch hook-and-loop tape
- Comes in black, with other colors available on request

Best For: Data centers in need of an easy way to better organize and manage cabling.

Price: \$7.50 (plain, pack of 10); \$9.95 (grommet, pack of 10); \$12.97 (buckle, pack of 10)

Contact: (866) 207-6631 | www.rackmoundsolutions.net

KVMs

Product

AdderView CATxIP 5000



Description

The AdderView CATxIP 5000 is the culmination of Adder's KVM over IP expertise to date. This new device offers four non-blocking simultaneous IP connections together with a local port (five separate users) and allows the user to control 16 separate devices. The AdderView CATxIP 5000 is small and compact, enabling you to fit two units side by side to support 32 computers and 10 sessions in just 1U of rack space.

- Four simultaneous users connect via IP to any of the 16 connected devices
- Direct connection for one local user to connect straight to the switch
- LDAP integration
- Integrated RS-232 control for managing external devices
- ADDER.net management software automates the task of managing network control hardware

Best For: IT administrators who need to control a large group of computers over IP from a single KVM switch.

Price: \$1,750

AdderView PRO MultiScreen



The AdderView PRO MultiScreen is a professional-grade KVMA switch that delivers ultimate flexibility for users who want to share high-resolution screens and modern USB peripherals between multiple computers. The AdderView PRO MultiScreen enables up to four multihead computers to be controlled from a single high-resolution KVM console using either dual-link DVI or high-definition analog video links.

- Features Adder's True Emulation technology, which ensures that the full characteristics of the connected USB keyboard and mouse are passed to every system
- Dual-link DVI-I with extended profile DDC EDID
- Includes two independently switchable USB 2.0 channels and an audio channel
- Supports resolution of 2,560 x 1,600
- Broad USB 2.0 Hi Speed device support
- Available in dual-, triple-, and quad-head versions

Best For: IT administrators, post production, graphic designers, detailed medical imaging, and broadcast studio professionals.

Price: \$1,795

Black Box ServSwitch Agility



The ServSwitch Agility from Black Box can function as a KVM switch, a sharing portal, or a DVI extender, depending on how it's configured. Admins can set it up as a point-to-point KVM extender for KVM switching, single-target sharing, or multicasting. Black Box's iPATH system lets IT administrators configure devices, users, and channels and features an on-screen dashboard that provides an overview of the entire system.

- Flexible topology for KVM extension
- Delivers digital video with no loss, minimizing bandwidth use while maximizing the user experience
- Features keyboard/mouse emulation and emulation for other standard human interface devices, such as touchscreens or flash drives
- Distance is limited only by your network capabilities when you use network switches
- Mounting options include rack mounting, desktop, and wall mounting

Best For: Health IT, command and control room setups, media post-production, and digital signage environments.

Price: \$2,045.95

Contact: (724) 746-5500 | www.blackbox.com

Product

Minicom Smart 232 IP Switch



Description

The Smart 232 IP Switch from Minicom is a multiuser, remote access IP KVM switch for data center and server room rack environments. The Smart 232 IP allows two remote administrators and one local user to access and control up to 32 servers through a standard Web browser. The Smart 232 IP measures 1U for convenient rack mounting with the included rackmount kit.

- Three simultaneous KVM users (two remote and one local) and two additional serial session users
- Utilizes the highly secure 256-bit AES encryption protocol with multilayer user rights
- Absolute mouse support means no need to change mouse settings in Windows OS
- Innovative Minicom KVM over CAT 5 technology
- Multiplatform support for PS/2 and USB
- Extends distance between servers and switch up to 30 meters/100 feet
- Seamless power control

Best For: Companies in need of a versatile, high-performance KVM with central management capabilities.

Price: \$3,495

Opengear IP-KVM-1001



Opengear's IP KVM is a one-port KVM over IP switch with both USB and PS/2 connectors for server and client connections. The IP-KVM-1001 is also equipped with dual RJ-45 10/100 Ethernet ports, USB connections, virtual media options, and a local KVM interface for direct access.

- Cost-effective 0U device for KVM control at the rack or remotely over IP
- Access systems during boot up, BIOS, and frozen OS conditions
- No client software
- Secure, encrypted browser sessions with authentication
- Deliver patches/upgrades as if onsite
- Console access to switches, routers, PBXes, or an external modem

Best For: IP-enabling analog KVMs and avoiding the single point of failure found in high-density KVM appliances.

Price: \$345

Rackmount Solutions CyberView Matrix High-Density CAT 5 KVM (UIP-3202)



The CyberView UIP-3202 from Rackmount

Solutions is a 1U high-density CAT 5 KVM switch with 32 ports. It offers a maximum distance of 40 meters (130 feet) between your server and KVM switch with the rear cable management using CAT 5 cords. With the UIP-3202, you can mix PS/2, USB, and SUN with multiplatform switch capability. A second user can work securely over 128-bit encrypted IP access using the Web interface to control multiple servers down to the BIOS level.

- Use of the RJ-45 CAT 5 interface allows for a higher number of ports in smaller density
- Traditional CAT 5 cords provide simpler cable management compared to coaxial cables
- 128-bit secure browser-based user access from anywhere in the world over IP
- Advanced user profiles and configurable OSD hotkey combinations

Best For: Enterprises that need a KVM switch that offers increased density, increased distances, enhanced cable management, and multiplatform capabilities over traditional KVM switch platforms.

Price: \$1,543

Contact: (866) 207-6631 | www.rackmoundsolutions.net

PRODUCT SPOTLIGHT

PHYSICAL INFRASTRUCTURE

Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

Compiled by Nathan Lake

Black Box ServSwitch Freedom



The Black Box ServSwitch Freedom is a four-port switch that works as if there is an extended desktop on a single computer, except that the user is accessing the desktops of four different PCs. Once the screen layout is configured, the user moves the mouse cursor over the X and Y borders to switch PC access. The ServSwitch Freedom supports a mix of USB peripherals, and it works on Windows, Linux, Mac, Sun, and NetWare systems.

- Makes for speedy switching between monitors from a tradeshow floor
- A flexible, four-port, professional-grade switch for simplifying USB keyboard/mouse access to multiple computers
- Enables a single user to switch between four monitors and attached CPUs and share USB peripherals between them
- Features two independent USB 2.0 channels
- Supports "quick-fire" switching via hotkeys, a mouse, or front-panel buttons
- Features stereo audio

Best For: Command and control centers.

Price: \$495

Contact: (724) 746-5500 | www.blackbox.com

Broadrack Saturn 8D



The Saturn 8D is a modular, eight-port DVI USB KVM switch with an audio switching function for Gemini and Unicorn consoles. It gives admins control over eight USB-enabled multimedia computers with DVI video interfaces, using keyboard hotkeys to select the computers, USB device hub port control, and audio channels. It's TMDS compliant to support DDC2B emulation and HDCP compliant for digital content protection.

- Eight-port DVI USB KVM switch with audio switching
- TMDS signal pass through
- USB keyboard and mouse support
- Support for Windows 98/SE/ME/2000/XP/Vista, Linux, and Mac OS
- Built-in two-port USB 2.0 device hub for sharing high-speed USB devices
- Supports resolutions up to 1,280 x 1,024

Best For: Organizations that need a KVM with support for digital video, USB devices, and audio switching.

HP Server Console Switch G2



The Server Console Switch G2 from HP integrates KVM and serial devices into a single management console for all of a data center's servers, network devices, and infrastructure. The G2 requires no software to be installed on the target servers, and it uses CAT 5 UTP cables between switch and server to improve cable routing and allow for field termination of custom cable lengths. The switch integrates with the HP IP Console switch to ensure that local KVMs can be integrated smoothly and easily into a KVM/IP remote management setup.

- Offers local console, USB, keyboard, and mouse support
- Scalable to 256 servers
- Integration with iLO and the HP IP Console Switch ensures that the local KVM user and remote manager work smoothly together
- Serial, PS/2, USB, and BladeSystem interface adapters to integrate all servers and devices into a single KVM infrastructure
- CAT 5 KVM cabling means minimal cabling in the back of the rack to ensure clean airflow and maximum cooling for today's dense data centers

Best For: Small and midsized businesses that need expandable support or enterprises that want a cost-effective KVM solution in a managed data center.

Price: Starts at \$769 for eight ports

Rackmount Solutions IP DB-15 KVM Switch



The IP DB-15 KVM Switch from Rackmount Solutions lets you access up to 128 servers from anywhere in the world over IP. It comes in both an 8-port (IP-802) or 16-port (IP-1602) version with a three-in-one KVM cable in 6-, 10-, 15-, and 33-foot lengths. The local console has a resolution up to 1,920 x 1,440 and has two USB Type A ports for keyboard and mouse. The remote console has a resolution of 1,600 x 1,200 and can accommodate up to 15 user logins.

- Eight or 16 ports in 1U of rack space
- 128-bit secure browser-based user access from anywhere in the world over IP
- Cost-efficient remote server management
- Multiplatform support: PC, Sun, IBM, HP, and Dell
- Supports Windows Vista/2003/XP/2000, Linux, Netware, Unix, and DOS

Best For: SMEs in need of a cost-efficient way to manage up to 128 servers remotely.

Price: \$913 (16-port); \$724 (8-port)

Contact: (866) 207-6631 | www.rackmoundsolutions.net

Trendnet TK-IP101



The TK-IP101 from Trendnet is a one-port KVM over IP switch that provides cost-effective remote server management for multiple users, regardless of server status. It eliminates the need to physically be in the server room to troubleshoot, reboot, and edit pre-boot functions. The TK-IP101 gives admins highly secure access to both Windows and Java-based clients. The TK-IP101 supports four concurrent logins with up to 16 active user accounts.

- Save time and resources by managing resources remotely
- Centralize management of multiple servers when connected to a conventional KVM switch
- Multiple user access control
- Crisp 1,600 x 1,200 resolution
- Intuitive Web user interface permits upgrades and backups
- Supports user-friendly Telnet sessions and FTP access
- Use with TRENDnet's TK-RP08 to control on/off power cycling of multiple devices remotely
- Works with LDAP, RADIUS, and Active Directory servers
- Supports Ethernet RJ-45 and PPP connection over serial RS-232 interface with data rates up to 1Mbps

Best For: IT staff that want to control BIOS-level functions, Windows-based applications, and other interfaces from a single intuitive Web user interface.

Price: \$577.99

Trendnet TK-RP08



The TK-RP08 from Trendnet is an eight-outlet remote power controller that provides remote on/off power control for devices in the network. With the TK-RP08, admins can service, reboot, and troubleshoot a network from one computer system. It can cascade up to 16 rack-mountable units and manage up to 128 total power outlets.

- Allows remote power control of eight electrical outlets using ASCII commands
- Numerical module display identifies power module bank number for each cascaded unit
- Service, reboot, and troubleshoot the network from any location when used with the Trendnet TK-IP101 KVM over IP switch
- 19-inch metal rackmount case
- Intuitive management interface
- Numerical LED display provides total real-time current loads
- Eight green (on/off) LED indicators monitor AC outlet status and eight red (alarm) LED indicators display power outlet state of failure

Best For: Those that want to save resources by performing power management from one computer.

Price: \$329.99

■ Survey: Employee-Owned Devices Are Risky, But Valuable

According to the 2011 ISACA IT Risk/Reward Barometer survey, 58% of respondents view employee-owned mobile devices, such as smartphones and tablets, as the greatest risk to enterprise network security, though 27% say the benefits outweigh the risks. A bring-your-own-device policy "lets both employees and organizations take advantage of the latest technology innovations at limited cost to the organization," says John Pironti, an ISACA advisor. "Unfortunately, it also introduces new vulnerabilities, due to the limited ability of most organizations to effectively manage and secure employee-owned devices accessing their information infrastructure." The survey showed that more than 80% of respondents have mobile security policies in place, though 32% of those respondents acknowledge that their policies are in need of updating or need to be more effectively communicated to their employees.

■ Government Workers Prefer Private Clouds

Public-sector IT pros feel that private or hybrid clouds will supplant public cloud offerings within the next five years. That's among the findings of a survey commissioned by Quest Software Public Sector. The report shows that about 36% of public-sector IT professionals believe that a combination of private and public cloud use will be most appropriate for their organizations, while only



about 7% of respondents say that dependence on public clouds is a good idea. Government cloud use is currently mixed. For example, the General Services Administration and the Department of Agriculture both used public clouds for migrating email, whereas the Army is using a private cloud for its email migration.

■ Nokia Adjusts Financial Outlook For 2011

Nokia announced its second quarter financial outlook, as well as the outlook for the remainder of this year for devices and services. Expectations are lower than previously anticipated. For the second quarter, expectations are down to EUR 6.1 billion from EUR 6.6 billion. Because of the surprising downturn in the second quarter, the company has opted not to predict results for the rest of the year at this time. Factors for the downturn include competition and market trends across multiple price categories, lower overall selling prices and margins for its devices, and industry pricing tactics.

■ Bank Of America Customer Accounts Breached

Bank of America customers were recently informed of a data leak involving their personal account information. An employee working at the time of the leak (who has yet to be identified) provided the confidential account information to others not working at the bank. Although specifics about the investigation have not been released, media reports list Social Security numbers, phone numbers, driver's license numbers, birth dates, and email addresses among the personal information obtained. So far, about 95 suspects have been arrested for involvement in the crime; Bank of America estimates this breach will cost the bank at least \$10 million.

FEATURED PRODUCT

Keep An Eye On Smaller Networks

Entuity's Eye Of The Storm Network Professional Edition Provides Granularity & Easy Management

by Holly Dolezalek

• • •

THE PIONEERS IN CAREFUL network performance management were mostly financial services companies, because they knew that a few seconds' delay could cost literally millions of dollars. But now, as networks are increasingly distributed—some in the cloud, some SaaS, some mobile—more companies are deciding that they need to monitor their networks



more carefully. That's an ideal environment for Entuity (www.entuity.com), a network management software company in Marlborough, Mass. Entuity's Network Professional Edition is the company's offering for the smaller end of the market.

EYE NPE

Entuity's flagship product has long been Eye of the Storm, network management software that performs network monitoring, infrastructure utilization reporting, device management, root cause analysis, and other functions, all in the interest of keeping the network running smoothly—or troubleshooting it swiftly if it isn't.

But EYE (Eye of the Storm) was built for the large enterprise and includes features for large-scale capacity planning and other capabilities for large networks that are geographically distributed. That means that its appeal for smaller companies was limited, because it contained some features that those companies don't necessarily need. Ken Klapproth, vice president of marketing for Entuity, explains that Entuity developed Eye of the Storm Network Professional Edition, or EYE NPE, to appeal to those smaller companies. So, Eye of the Storm is now known as Eye of the Storm Enterprise, and EYE NPE is a new version of that product for a different market segment. "Small to medium-sized enterprises have smaller geographic areas to cover and tend to be more concerned about troubleshooting and diagnosis," Klapproth says. "EYE NPE monitors the same components as Eye of the Storm Enterprise, such as routers, hubs, switches, and workstations; it's just that the type of data it analyzes is focused on troubleshooting and keeping the network operationally efficient."

It reflects what Klapproth describes as Entuity's focus on doing one thing really well. "Other companies provide tools and applications for application management, system management, server management, or patch management, and they try to broaden their offerings to a framework," Klapproth says. "We stay focused on network management because that's what we're good at."

Eye of the Storm Enterprise can track hundreds of devices. By way of comparison, EYE NPE is targeted at networks with up to 100 devices and up to 700 objects, such as ports or end-user laptops. "It's deployed the same way as Eye of the Storm Enterprise—it's a Web-based application that's installed on a server, and users can access it anywhere on the network," Klapproth says.

Granularity & Automation

EYE NPE has a few competitors, but one of the ways it differentiates itself is in its granularity. Other similar products monitor devices on the network, for example, and so does EYE NPE, but it monitors more than whether that device is up or down or its CPU utilization. "For example, it can tell you the performance of the serviceable modules within that device, such as fans or power supplies—the things that go wrong and break down and then cause the device to go down," Klapproth says. "EYE NPE gives visibility to that level of detail, and we've found that customers really like that."

The software also offers benefits that flow from Entuity's enterprise pedigree. EYE NPE runs on the same engine that EYE Enterprise does, and that engine has been under development for more than 10 years. Klapproth explains that some of the more advanced features of the enterprise engine are also in EYE NPE. One of those features is its root cause analysis capabilities, which work to separate primary problems from downstream problems in the network. "For example, you might have a switch go out, and then a whole slew of problems related to that switch will be reported on, as well," he says. "Our technology separates the precipitating event from the downstream events, and anything that's repeated over and over doesn't get reported on. It's

a way to present more actionable event information so that it's easier to address the real cause of the problem right away."

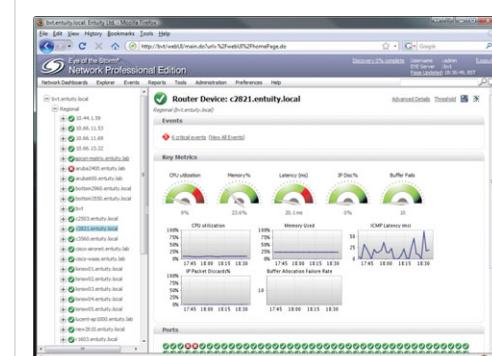
The focus for development in recent years has been on delivering more of that kind of feature: making the information the software reports on more actionable, which allows busy IT professionals to automate more. "It's one thing to have fine-grained detail about latency or jitter or other physical measures of the bits as they move across the network, but it's another to use it in an actionable,

automated way so that the administrator doesn't have to do anything about it."

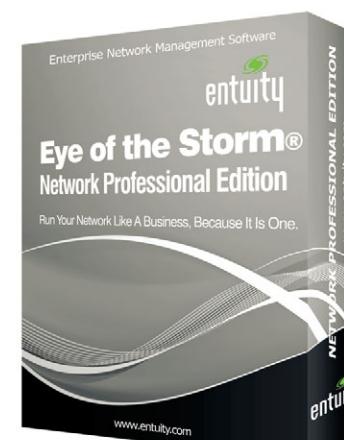
The company is also moving toward more Web-friendly products, and a new feature in the latest version of EYE NPE illustrates both of those qualities: a Web-based mapping application that automatically draws maps of the network. It draws the devices, the connections between those devices, and the protocols that are moving across them. If something is going on somewhere in the network, it delivers information through pop-up icons about the nature and severity of that event.

Shifting Marketplace

EYE NPE continues to evolve in response to customer feedback and to changes in the overall network management marketplace. One of those changes is coming from a new source that is likely to become more important all the time: new network hardware manufacturers. "The growing influence of Chinese hardware manufacturers like Huawei means that our software has to be able to manage those types of devices," Klapproth says.



Network Professional Edition's dashboard gives IT admins a clear view of network performance and allows for easy manageability.



More wireless vendors and more pervasive use of the cloud have also had their impact on EYE NPE, and will continue to do so, Klapproth says. But one thing hasn't changed: Users need to monitor the network in part because the network reflects the business. "With any kind of technology, the first thing you accomplish is what you can measure—what data—and then how to apply that data to something a user cares about," Klapproth says. "No matter how the organization of networks changes, we always hear that customers want an easier, more actionable way to know how the business is running." □

ENTUITY EYE OF THE STORM NETWORK PROFESSIONAL EDITION

(508) 357-6346
www.entuity.com

NPE is network management software that monitors network performance, resource management, and availability.

Network Virtualization Primer

Virtualized Networks Deliver The Full Potential Of Virtual Machines

by Kurt Marko

...

VIRTUALIZATION has become an irresistible force advancing on every corner of the data center. Servers were the first to demonstrate the benefits of inserting a software abstraction layer between IT resources and their physical embodiments, and with virtual machines now de rigueur in today's data centers, it's becoming clear that to realize their full promise, the virtualization train can't stop there. Next up: virtualized storage and networks. Virtualized networks "enable the other half of the virtualization story," says Jon Toor, vice president of marketing at Xsigo Systems (www.xsigo.com). "Servers are the start, but virtual infrastructure is the next phase."

With server consolidation ratios rising in tandem with IT's comfort with virtualized applications, the proliferation of virtual network interfaces, or vNICs, creates management challenges for traditional LANs that were designed to manage links and traffic flows between physical, not virtual, Ethernet ports. vSwitches—software switches embedded in the hypervisor—work well enough as long as the VM count is low, but these quickly become problematic as the number increases. Network management complexity ratchets up again when virtual workload management software is dynamically moving VMs between systems because, as Burton Group analyst Eric Siegel notes, any state information within the vSwitch, such as flow information or firewall state, is lost. The situation would be much simpler if those virtual interfaces looked more like physical ones, meaning traffic is better virtualized in the switch than the hypervisor.

Another factor fueling network virtualization is the industry's migration to 10 Gigabit Ethernet—a speed limit that's overkill for most single servers. This increase in server bandwidth means each machine can not only handle more applications but also has enough capacity left over to collapse data and storage networks onto a single pipe. Yet slicing and dicing a single fat Ethernet link into multiple LAN and SAN connections only works if these sub-segments can be logically assigned to specific VMs.

The ultimate goal of network virtualization, as a white paper from HP succinctly puts it, is to "abstract and pool the server-edge connections so that they look like NICs and HBAs to the external LAN and SAN." Realizing this vision requires several new technologies and accompanying standards.

Virtual Access Layer Switching Options

There are several ways to handle network traffic within a virtualized server. One approach uses a software switch, or vSwitch, as part of the hypervisor. An alternative is to make virtual machines look like traditional servers and pull switching out to an external edge device.

There are two standards for pursuing the latter option: 802.1Qbg Edge Virtual Bridging and 802.1Qbh Bridge Port Extension. The core EVB standard is focused on addressing the need for Ethernet traffic to "hairpin"—i.e. egress from one VM out the adapter port and then ingress back in the same port to another VM. The 802.1Qbh standard addresses issues such as broadcast/multicast traffic replication and difficulty with monitoring ports with a tagging standard for flows from each VM.

Source: "Hypervisor Switching vs. External Switching," Cisco Systems slidedeck; "Standards and Solutions for Virtual Machine Networking," Cisco Systems draft white paper.

Network Virtualization Types & Technologies

Old network hands may wonder what all the fuss is about, scoffing that VLANs have been around for years. The difference is that network virtualization is a full software abstraction of network flows right down to the server interface, independent of all hardware devices, while VLANs merely partition physical network segments into separate virtual ports. Network virtualization thus requires a new set of still-developing standards that are extensions of 802.1Q VLAN tags.

The first step toward providing edge switch visibility to virtual network flows entails a relatively small standards modification allowing so-called reflective relays, also known as edge virtual bridging, or EVB. Unfortunately, without identifying each virtual flow, the switching fabric has no way of distinguishing the flows, necessitating a follow-on standard, known as bridge port extension, or BPE, that adds something akin to a VLAN tag to each virtual flow.

Virtualization Architectures

Two architectures have emerged to build virtualized networks: one with traditional Ethernet connections between server and edge switch and another using a high-speed network fabric between the two. The first scenario is thus far limited to blade servers because the virtualization magic happens within a new generation of blade switch module that can map between multiple virtual LAN and SAN server interfaces on the server-facing side of the switch and several external Ethernet and/or Fibre Channel ports. Here, each VM on a blade sees one or more virtual Ethernet (and possibly FC) interfaces; outside the blade chassis, these virtual NICs and HBAs look just like normal physical ports behind a switch.

The second, fabric-based architecture is similar; however, the virtualization work is performed in a new type of edge switch. Fabrics act as an edge switch backplane extension—sort of a high-speed umbilical cord from switch to server. This works best with a high-speed interface. The fabric edge switch parcels a very fat pipe into any number of virtual Ethernet and FC connections, which look to each VM as discrete physical interfaces. According to Toor, "the isolation [between virtual NICs and HBAs] is just as pure as if you had a wire," and he notes that each virtual interface can have unique bandwidth and QoS configurations.

Of the two architectures, virtualized Ethernet is more common but is still limited to blade servers, likely due to the availability of a high-speed mezzanine backplane between switch and server. Fabrics are available on either blades or standalone servers but necessitate using a special server interface.

Recommendations & Planning Advice

It makes little sense to bolt sophisticated new virtualization technology onto a creaky data center network, so a wise first step is optimizing the overall network architecture. This generally includes a couple of elements: simplifying the topology to reduce the number of switching tiers and upgrading edge networks to 10GbE. Networking vendors have made great strides using new Ethernet standards such as TRILL (Transparent Interconnection of Lots of Links) and IEEE SPB (Shortest Path Bridging) in flattening networks and optimizing traffic flow. With today's equipment, it's possible to reduce the typical three- or four-tier network topology to just two: core and edge. Virtualized networks maintain this simplicity by obviating the need for another vSwitch layer within the hypervisor.

Updating the network architecture also means increasing throughput, both within the edge switch backplane and between switch

Key Points

- The spread of virtual servers throughout the data center, with faster hardware sporting higher consolidation ratios, means networking virtual machines becomes more complex.
- As with virtual machines, network virtualization brings the same segregation between resources, their specific configurations and capabilities, and the supporting hardware.
- There are two key virtualization approaches: one using blade switching modules and another using a new type of edge switch with high-speed fabric interconnects between switch and server.

and server, making 10GbE a de facto requirement for virtualized networks.

The other major consideration is whether to consolidate FC SANs onto the virtualized data network. Here the choice may be driven more by organizational and administrative factors than by technological limitations, as most vendors provide means of linking the two. However, converged networks also mean converged, or at least more tightly integrated, network operations—a fact that some siloed IT organizations may not be prepared for. □

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■ European Commission To Investigate Merger Deals

The European Commission will investigate the merger deals agreed upon by Western Digital and Hitachi as well as Seagate and Samsung. Western Digital and Seagate are two of the largest hard drive manufacturers in the world, and the EC worries that these acquisitions could lessen competition in the market. The EC has a deadline of Oct. 10 to make its rulings. Seagate's deal with Samsung is for \$1.38 billion, and Western Digital's deal with Hitachi is for \$4.3 billion.

■ IT Spending To Increase Within Financial Services

Process more data more quickly, cheaply, and reliably. Leading financial technology executives indicated to Bloomberg in a recent survey that they desire innovations that would allow them to do just that. Bloomberg polled 100 CIOs and technology decision makers from major financial service firms at its recent Enterprise Technology Summit. According to results, 76% of those surveyed say they plan to increase IT spending in the coming year, while 17% plan to cut spending and 7% will keep spending at the same level. Of the companies surveyed, 55% are shifting more overall capital expense to managed solutions, while 33% don't plan to and 12% don't know if they will. Over the past two years, 84% have increased spending on regulatory and compliance systems, 5% have cut spending, and 11% indicate spending remained the same. In terms of what infrastructure investment has produced the most ROI in the past 12 months, 45% say cloud computing, 33% low-latency trading, and 23% CEP (complex event processing).

■ Tablets Bring About Decline In HDD Revenue

Tablets, with their flash-based solid-state drives, are having an impact on the hard disk drive market, according to a new report from iSuppli. HDDs are expected to bring in \$28.1 billion this year, up 4.1% from 2010 but significantly lower than the 7% growth the market experienced between 2009 and 2010. HDD expansion will likely slip to 3.9% in 2012 and then to 2.1% by 2015. Cloud storage and the ability of manufacturers to produce high-density, low-cost drives are also taking a toll on the HDD industry. The optical disk market for computers is also dropping, with revenue for this year expected to be \$12.2 billion, down from \$12.7 billion last year.

■ AT&T To Roll Out LTE Service This Summer

AT&T will launch its LTE service in Chicago, Atlanta, Houston, Dallas, and San Antonio this summer. The company says it plans to roll out the 4G service in 10 other cities by the end of the year. It will also release 20 new 4G devices this year, some of which will be LTE-capable, AT&T says. Verizon's LTE network is already available in 38 cities and 60 airports, and Verizon plans to expand that to 76 markets by mid-June. Sprint's 4G network is available in about 70 markets.



The Case For File Virtualization

Virtualization Means Cutting Down On The Amount Of Storage Required & Improving Data Management

by Carmi Levy

• • •

BEFORE SERVERS, the networks they ran on, and the storage subsystems they drew from were virtualized, it made little sense to consider virtualizing files, as well. Now that virtualization is well on its way to redefining how data centers are built and managed, file virtualization is ready to follow suit.

Key Points

- File virtualization separates the traditional connection between files and the physical hardware where they're stored.
- Boiling down data into one unified copy allows for easier management and requires less storage space.
- File virtualization is also key for reigning in explosive growth in unstructured data.

Like all forms of virtualization, file virtualization involves separating the formerly tight links between data files and the physical hardware on which they were

on a given business need at that moment. They also give IT tremendous flexibility in terms of where to physically store data, all without requiring active involvement from business resources, applications, or users.

A Single, Unified Copy

The move toward file virtualization is being driven by explosive growth in unstructured data and the need to control storage infrastructure cost and complexity. Jack Gold, founder and principal analyst at J.Gold Associates, defines file virtualization as replacing multiple instances of the same file with pointers to one, centralized version.

"Clearly, sending the same 10Mb PowerPoint file to 100 people, if the file were copied to each inbox, would take up a lot of storage," Gold says. "Microsoft Exchange, for instance, is smart enough to know that it only needs a single file stored once, with a pointer sent to each user."

File virtualization ensures that all applications, including virtualization-aware ones such as Exchange as well as those that were never architected with virtualization in mind, can support abstracted file management. Gold says a virtualized

say a table—to stay in the same logical place, but not physically. This is exactly the same kind of logic we're using for files, as well."

A Decided Lack Of Structure

Continued growth in unstructured data without parallel growth in IT's ability to manage it could hamper the organization over time.

"If you continue to allow the unstructured data space in your organization to scale and you really have no control over the speed with which it scales, users will continue to create content that will be stored somewhere and anywhere, like on thumb drives, NAS systems, [or] locally," Willis says. "This data is very liquid, and it will leak. And because of this, you won't be seeing the whole picture."

Willis says companies have to climb the information value stack, and they have to move beyond investing in storage to investing in information and content.

"The way you turn storage and data into information is by being able to find it when you need it and by being able to mine it, manage it, and associate the proper service

"These are not hierarchical file systems like they used to be. Smart file systems are objectized, and they totally divorce where you think the file is and where it actually is."

- Hitachi Data Systems' Christopher Willis

stored. A new abstraction layer between clients and underlying storage infrastructure makes it relatively easy for disparate storage resources to appear as one unified environment and for the files themselves to be managed more precisely and efficiently. Formerly isolated data silos give way to consistently managed storage environments, while files themselves are stored in the most cost- and performance-effective manner for a given usage scenario.

Rethinking Traditional Storage

"The trend toward file virtualization is part of a holistic approach to information management," says Christopher Willis, director of cloud and converged solutions for the Americas at Hitachi Data Systems Canada (www.hds.com). "Virtualization is a standard that simply represents a level of indirection that allows us to [separate] the logical from the physical. This will give us the flexibility to do what we need to do in the future."

Willis says file virtualization represents a significant re-think of traditional file storage strategy.

"These are not hierarchical file systems like they used to be," Willis says. "Smart file systems are objectized, and they totally divorce where you think the file is and where it actually is."

Virtualized file solutions allow IT to present data in different ways, depending

approach isn't simply about reducing wasted storage. It's also a bandwidth and performance issue.

"We generate so much data these days that companies still want to examine storage minimization," Gold says. "The disk costs may be low, but the upgrade and backup certainly isn't. And a backup will obviously take a lot less time if you're not writing the same big file hundreds of times."

Laying The Foundation For Active File Management

By proactively managing file storage, IT can get ahead of the curve and ensure that the organization at large can still find the information it needs to drive the business.

"The notion of archival has brought a whole new set of requirements," Willis says. "Without the application needing to know, we want to be able to move that file down to a cheaper type of disk or storage wherever possible."

File virtualization lays the groundwork for more intelligent storage systems that can actively manage multiple storage tiers, all without requiring hard-coding from the applications themselves.

"There's a level of indirection at the file system level," he adds. "This creates flexibility for the files themselves. It's just like a database, where there's a level of abstraction that allows an object—let's

level with the importance of that data at that point in time," Willis says.

He adds that companies that fall behind risk lacking sufficient agility to run their businesses today and tomorrow. "Think of it like a weight loss regimen," Willis explains. "If I can't stay in shape at 35 or 40 years old, then what's my potential for doing so when I'm 50? This is a discipline that has to start now." □

File Virtualization's Security Benefits

In an IT environment in which securing sensitive data is becoming increasingly vital to an enterprise's profitability, file virtualization can offer a number of benefits.

"With only one copy of sensitive files, it's much easier to protect and be compliant with regulations," says Jack Gold, founder and principal analyst at J.Gold Associates, who adds that file virtualization can potentially improve overall storage performance. Security is another rationale for deepening investment in file virtualization.

"If you have only one file, in theory you can control access better and limit the possibility of loss and data leakage," Gold says.

SKYBOT SCHEDULER 2.0

NEW PRODUCT

by Marty Sems

Lessen Your Workload With Job Scheduling

TODAY'S ENTERPRISE WORKLOADS inevitably include a lot of processes that need to be done each day, but it can be wasteful to allocate man-hours and computing resources to performing them manually. To combat this lost productivity, Skybot Software offers Skybot Scheduler 2.0, which offers intuitive job scheduling for easier workload automation in today's IT environments.

Skybot Scheduler 2.0 builds on the key capabilities of its predecessors. On board are reactive and event-driven scheduling, an intuitive dashboard, cross-system monitoring, job history data, and auditing features. Based on Java, the software is fully portable, meaning it doesn't need to be installed on a dedicated system. Its interface is accessible through a Web browser, and it uses its own dedicated database.

New to version 2.0, schedules made with Skybot Scheduler can now include Microsoft SQL Server jobs, the company says.

The software makes it easy to schedule batch jobs on virtually any server in your organization, Skybot Software says. It supports Windows, Linux, and

**Skybot Scheduler Dashboard**

Scheduling software that automates enterprise workloads from an intuitive Web-based interface.

Unix systems, including Solaris, AIX, and HP-UX OSes. And you can do it all from a single console, thus saving time and legwork.

Skybot Scheduler 2.0 is adept at starting jobs on time, every time, but it's also designed to ensure that things are running properly. It monitors the processes on each server so it can notify you immediately in case of an error. This means that complex dependencies can be kept intact instead of being derailed by a mysterious failure somewhere on the network.

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IPSWITCH WHATSUP GOLD VERSION 15

NEW PRODUCT

by Marty Sems

Knowledge Is Power

WHATSUP GOLD from Ipswitch, Inc., gives you tools to manage any network, including wireless and virtual components. The newest version of the program is even more comprehensive, yet easier to use, and it's still sold at a competitive price.

WhatsUp Gold Version 15's Web interface includes console functions and task-oriented navigation, meaning you'll find the network and infrastructure reports you need in less time.

Also new are integrated Layer 2 discovery and maps, which are accessible from the Discovery Console. Similarly, WhatsUp Event Log Management integration now places security information into WhatsUp Gold dashboard views to give you at-a-glance intelligence on your network.

WhatsUp Gold Flow Monitor comes with a new Flow Configuration Wizard. This important setup aid not only detects the routers and devices on your network but also automatically configures them.

WhatsUp Gold WhatsVirtual, Ipswitch's virtual discovery engine, also received a makeover in this new version. Its Dynamic LiveMaps feature tracks associations between virtual and physical devices and updates your view automatically, making live migrations much more transparent.

**Ipswitch WhatsUp Gold Premium v15**

An updated version of Ipswitch's network management tool that features improved Flow Monitor features, Event Log Management integration, and more.

\$2,195 (25 devices) and up

"The enhancements to WhatsUp Gold, Flow Monitor, and WhatsVirtual are designed to make life easier for today's busy network administrators, with more powerful, integrated and automated tools that provide critical network and security information quickly and easily—when, where and how you need it," says Ennio Carboni, president of Ipswitch Network Management Division.

WhatsUp Gold Version 15 and its components have been validated for FIPS 140-2 cryptography compliance. The software supports WMI, Windows service and integrated application monitoring, ESX/ESXi v4.1, SSH agentless monitoring of Unix and Linux, and more. You can evaluate Version 15 free for 30 days.

(800) 793-4825
www.whatsupgold.com

NAPATECH NT40E2-1 INTELLIGENT NETWORK ADAPTER

NEW PRODUCT

by Andrew Leibman

Network Monitoring & Analysis In The Fast Lane

ORGANIZATIONS THAT USE high-bandwidth applications need a powerfully fast network adapter. Napatech's NT40E2-1 intelligent network adapter is the only 40GbE adapter that lets organizations make the most of their network monitoring and analysis applications today and in the future.

Internet traffic continues to double every year, and enterprises must keep pace with growing bandwidth demands. The Napatech NT40E2-1 can tackle bandwidth-hungry applications and perform full 40Gbps packet capture and processing on the network adapter, regardless of packet size. Napatech's 40GbE adapter is ideally suited to the demands of real-time network monitoring, analysis, and security applications. Features include frame decoding, intelligent flow detection, and high-precision—within tens of nanoseconds—time stamping and synchronization capabilities for accurate latency measurements. Another capability network administrators will appreciate is the adapter's ability to reduce host CPU load to practically zero, thanks to offloading support for distribution to up to 32 CPU cores.

**Napatech NT40E2-1 Intelligent Network Adapter**

A 40Gb Ethernet adapter capable of receiving and transmitting traffic with zero packet loss that's ideally suited to network analysis and real-time monitoring.

The NT40E2-1 features a low-profile design, which lets system builders install it into almost any standard server chassis. The adapter features 1GB of onboard memory and utilizes a PCI-E 2.0 interface for up to 25Gbps bus bandwidth. A pair of NT40E2-1 network adapters can also be combined for in-line applications; one adapter handles the upstream reception and transmission, and the other handles the downstream reception and transmission. And because the 40GbE adapter is built using the same API as Napatech's 10Gbps adapters, users can install and begin using the NT40E2-1 on a plug-and-play basis. The device supports Linux, FreeBSD, and Windows operating systems.

(888) 318-8288
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FEATURE PACKAGE

Companies To Watch

We profile five companies with products and tools important to your data center.

Securing The Network One Firewall At A Time | 1

■ Palo Alto Networks has application control solutions that could save your network.

Power Efficiency & Performance | 24

■ Athena Computer Power Corp. has staked its reputation on providing high-performance, highly efficient power supplies to its customers.

Exceptional Service & Quality | 25

■ Information Support Concepts offers an impressive variety of racks, cabinets, flooring, cabling solutions, PDUs, and other furniture and accessories for the data center.

Performance Monitoring Pros | 26

■ Since its inception, Australia-based nMetrics has been manufacturing affordable integrated network and application performance solutions specifically designed for ease of administration.

An SMB-Friendly Data Center | 27

■ Businesses looking for colocation providers often have to choose between service and cost. But that's not the case with Data Foundry's new Texas 1 data center in Austin.

Power Efficiency & Performance

Athena Computer Power Brings 80 PLUS-Certified Power To The Data Center



by Holly Dolezalek

• • •

THESE DAYS, you really can't talk about power without talking about efficiency. Athena Computer Power Corp. has staked its reputation on providing high-performance, highly efficient power supplies to its customers.

Athena Computer Power (www.athenapower.us) was founded in 2002 and is headquartered in City of Industry, Calif., where it employs more than two dozen people. It also has another 300 employees at its manufacturing facility in Shenzhen, China, a city on the southern coast of the country northwest of Hong Kong. It's there that Athena's claim to fame is manufactured: power supplies.

The company specializes in redundant power supplies for mainframe computers. Athena sells its products to distributors and resellers, who then sell them on the open power supply market to end users. "A lot of our end users are in schools or government, but we don't track that too closely because we don't deal directly with them," says Ricky Lim, public relations coordinator for Athena Computer Power. A team of salespeople sells to the distributors or resellers, of which Athena Computer Power currently has about 100.

Most of Athena Computer Power's sales are in North America, primarily the United States, although the company is beginning to expand its footprint in Canada. About 70% of sales

Supplying The Power

The company sells a wide variety of power supplies for PCs, servers, mainframes, and other uses. It doesn't have a product that it would consider its flagship

that supports most mini-ITX 6.7- x 6.7-inch motherboards. The power adapter runs 110 to 240 volts and 60 watts or 5 amps. Because of its small size (it weighs 3 pounds), Lim says, it allows users to relocate workstations easily and adapt to

supplies, Lim explains. The company is expanding quickly, which means a need for more manpower. In April, Athena signed an agreement with Zippy Technology to sell its products on Athena's Web site. Zippy is a manufacturer of server and IPC power supplies and other networking equipment, and its desktop and server power supplies are now among Athena's product lineup. The agreement expands the company's lineup of available products, Lim explains.

But as with any expanding company, the challenge is to do that without compromising the quality of existing products and relationships. Lim notes that this means that customer service remains an important focus for Athena. "If an end user provides us with proof of purchase for one of our products and they need something done, we modify that product however we can," he says. "We staff engineers whose job it is to try to make things work for them."

More & Better

The future for Athena Computer Power is going to include more efficiency, both in operation and in power. Right now, nearly all of its products are 80 PLUS certified at the Bronze level. To qualify for 80 PLUS certification, a power supply must achieve at least 80% efficiency at three specified loads: 20%, 50%, and 100% of maximum rated power. But at the Bronze level, the same power supply has to achieve 82% at 20% load, 85% at 50% load, and 82% at 100% load. "As of the second quarter of this year, all of our existing products will be certified at the Bronze level," says Andy Liao, Web marketing director for Athena Computer Power. "By the summer or fall of 2012, we expect to have one or two of our products certified at the Silver level." That level is more demanding; 80 PLUS Silver requires that a power supply operate at 85%, 88%, and 85% efficiency at 20%, 50%, and 100% loads, respectively.

Lim says the company is working on some serious research and development. With five engineers—four in China and one here in the United States—dedicated to R&D, the company is working on projects that Lim says will set a whole new direction in the power supply market. ■

"If an end user provides us with proof of purchase for one of our products and they need something done, we modify that product however we can. We staff engineers whose job it is to try to make things work for them."

- Athena Computer Power's Ricky Lim

are North American, and the rest are in Europe and Asia, primarily the United Kingdom and Taiwan.

"Europe wants a higher efficiency rating for power supplies, so we want to reach that rating and offer a more quality supply," Lim says.

such as for kiosks like Redbox or vending machines—things that need their own power supply," he says.

The company's strongest sellers for the SMB market, Lim says, tend to be the α-Box (α means alpha) and the FlexATX models. The α-Box is a mini-ITX chassis

small areas or changing configurations.

The FlexATX power supplies come in capacities of 350W, 300W, 250W, and 220W. The 350-watt FlexATX is designed for the 1U mini-ITX chassis and is compatible with many IBM SurePOS, Shuttle XPC, and HP Pavilion systems. Its Active Power Factor Correction and remote on/off functions make it both

adaptable and reliable for not only supplying reliable power but also making efficient use of that power, Lim explains.

Expanding & Maintaining

Athena Computer Power's goal is to become a household name in power

FEATURE PACKAGE

Exceptional Service & Quality

Information Support Concepts Provides Enterprise-Class Equipment For Companies Of All Sizes



by Robyn Weisman

WHEN MANSFIELD, TEXAS,-BASED Information Support Concepts came into being almost 25 years ago, its business revolved around providing support products for companies that used mainframes, round reel tape, and a lot of other equipment that is no longer used today.

As data centers migrated from mainframes to network-based architectures, ISC followed suit, and today it offers an impressive variety of racks, cabinets, flooring, cabling solutions, PDUs, and other furniture and accessories for the data center. "It has been incumbent on us to have products that fit applications

rings. "If we don't have an answer, we'll get it and call back," Hunt says. "And if we can't do something, we'll suggest somewhere else where they can go to get what they need."

Understanding Today's Power Issues

According to Hunt, one of the biggest changes in the past few years is the advent of "smart power" PDUs and power strips. "With smart power, you can access your power online and remotely turn on and off different outlets if you need to, get current amp readings, [and get] environmental readings like heat and humidity, all off of a PDU," Hunt explains.

you can't easily put in a new HVAC system," Hunt says.

ISC sells portable air conditioners to address these unforeseen problems with localized hot spots when you need quick and simple cooling power. For example, it sells a 12,000 BTU portable air conditioner, by Tripp Lite, that uses a built-in evaporator rather than a water collection tank, drain tube, or drain pan; environmentally friendly R410a refrigerant; and a 71-inch flexible tube for targeted cooling.

Right Things At The Right Price

Hunt knows that most of the products his company sells are not unique. "It's just the way we go about doing it. When we get good price points, we try to pass it on to our customers," he says.

Recently, ISC introduced the 42U WC Series Server Rack Cabinet that costs only \$799.95, including shipping anywhere in the continental United States dock-to-dock. It has a load

capacity of almost 1,800 pounds, removable side panels, perforated front and rear locking doors, and a perforated roof with cable entry access in the rear, among other features.

"We're excited about this because nowadays it usually costs between \$200 and \$400 to ship a cabinet. It's just a great price and value for our smaller customers who need a stand-alone cabinet," Hunt says.

In addition, ISC does a tremendous amount of custom work, according to Hunt. "We've got a lot of companies that are trying to do some unique things with shelving, cabinets, and racks," he says.

And ISC will do this custom work even for small quantities. "Whereas normally people might have to buy a minimum of 100 to 200 pieces to do something custom, we'll do it for only 20 pieces without design fees. We're not everything to everybody, but within our specialty, we do quite well," Hunt says. □

Information Support Concepts, INC

Leading Information Technology Products Since 1987



Company Name: Information Support Concepts, Inc.

Location: Mansfield, Texas

URL: www.iscdfw.com

Date Company Founded: 1987

Interesting Fact: ISC's trademarked mascot is "Rackmount Ranger," a John Wayne-style hero who saves IT professionals from the perils of the server room. His motto: "Don't put your hardware in danger! Call the Rackmount Ranger!"

for all the different network environments today," says Kevin Hunt, vice president of sales and marketing at ISC (www.iscdfw.com).

ISC's combination of off-the-shelf and custom solutions for data centers makes it a great one-stop shop for SMEs needing new data center support racking and accessories. And for those of you who aren't inclined to switch vendors for this reason, ISC's customer service may cause you to think again.

A+ Service For SMEs

Unlike most of its competitors, ISC is dedicated to making sure its customers get the exact products that they need, whether they're ordering a single KVM switch or 100 cabinets. ISC has an A+ rating with the Better Business Bureau and has not had a single complaint in at least the past three years.

"We call everybody, even those who order online, to make sure this product or solution will be the best one for them," Hunt says. "And the majority of our customers appreciate it because if you've got, say, a blade server, and you order the wrong cabinet, you can burn your system up."

And ISC is responsive, whether you have a question about something you've ordered or about its solutions in general. Hunt says that during business hours, ISC staff answer phones within three

In the past few years, smart power has taken off as organizations cut IT budgets and staff. "In the last couple of years, use of smart power has snowballed, especially as smaller organizations are using blade servers," Hunt says.

For example, if something is overheating in a local area of a rack or cabinet, it may not cause the temperature of the room to get to the point where it sets off any alarms. A smart PDU will be able to let managers know if those localized hot spots are a problem.

"Unless you have somebody constantly monitoring equipment, it's worth the investment of putting in smart power to be notified of potential problems electronically," Hunt says.

On-The-Spot Cooling

Because smaller organizations now are adopting newer technologies such as blade servers for the power and efficiencies they provide, ISC is committed to making sure that its customers understand the cooling requirements involved and to offering targeted solutions for those that can't simply move or revamp their existing data centers.

"You might put in two cabinets in a room that was never designed for the amount of heat buildup that blade servers generate, and then all of a sudden, you've got problems you didn't anticipate, and

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■ Companies Join To Form Open Virtualization Alliance

A number of prominent tech companies have come together to form the Open Virtualization Alliance, which is a consortium designed to complement existing open-source communities that manage the development of the Kernel-based Virtual Machine hypervisor and associated management capabilities. The list of members includes BMC Software, Eucalyptus Systems, HP, IBM, Intel, Red Hat, and SUSE. The goal of the consortium will be to provide education, best practices, and technical advice for businesses that want to evaluate their virtualization options. The use of Kernel-based Virtual Machine virtualization can help to improve the performance, scalability, and security of applications in a large-scale cloud computing environment.

■ DoD Issues Open-Source Development Guide

The Department of Defense has created a guide for using open-source and open-standards technology for software in the U.S. military. The "Open Technology Development: Lessons Learned and Best Practices for Military Software" guide is designed to help military software developers meet the changing mission demands of military operations. As such, one of the key features is that the military can reuse the code and update it, so that the military can alter the software to quickly meet new, dynamic threats.

■ Companies Hesitant To Trust The Cloud With Storage

Many large companies are hesitant to use public cloud storage, according to a report from market research firm TheInfoPro. Although large companies are implementing cloud plans for other areas, storage appears to be an area where, even at the lowest tiers such as archiving, companies aren't comfortable using a cloud provider. Less than 10% of the companies surveyed indicate any plans to implement external cloud storage. The study also shows that the storage industry is growing—outpacing other IT



sectors—and is spurred on by new application growth. That means that players in the storage sector will face stiff competition in the future.

■ Venture Capital Firm Buys Intermedia

Private equity firm Oak Hill Capital Partners of Stamford, Conn., has agreed to acquire cloud service provider Intermedia.net. Terms of the deal remain undisclosed at this writing, but it's expected to finalize before the end of the second quarter. Former Savvis CEO Phil Koen will come on board as the chairman and CEO of the new acquisition. Intermedia is known for supplying its SMB customers with cloud services such as HostPilot Control Panel, SharePoint, Exchange, and VoIP.

■ HP Sells Videoconferencing Business To Polycom

HP plans to sell its videoconferencing business to Polycom for \$89 million. The biggest product and technology Polycom will inherit in the deal is the Halo videoconferencing solution. Although videoconferencing has recently become more popular for companies, HP was never able to get a true foothold in the industry. The plan is for HP to resell Polycom's products and for Polycom to use some of HP's technology in its products. The deal is expected to close in the third quarter.

FEATURE PACKAGE

Performance Monitoring Pros

nMetrics' Easy-To-Use Monitoring Solutions Ensure Efficiency & Manageability

by Joseph Pasquini

THE EFFICIENCY AND PERFORMANCE of any corporate network requires both complete visibility of the traffic traversing the network and the ability to identify and remedy performance issues as they arise. Nothing can bring a corporate network screeching to a halt faster than an improperly configured device or a rogue application generating all sorts of unwanted traffic. The network is the lifeblood of the business, and if the network fails, so too may the company.

Network and application performance monitoring solutions, which provide data center admins with observation, reporting, and inspection capabilities, have been around for a number of years. The reality, however, is that solutions that are designed to make your network run more smoothly have ironically grown more complex and at times even unmanageable.

That isn't the case with network and application performance monitoring solutions from nMetrics (www.nmetrics.net). The company's performance monitoring offerings are specifically designed to ensure secure, efficient networks and applications at a price that's affordable for companies of all sizes, from branch offices to enterprise-class data centers—all while keeping ease of use in mind.

Striking The Perfect Balance

Since its inception, Australia-based nMetrics has been manufacturing affordable integrated network and application performance solutions specifically designed for ease of administration. When Steven Urquhart and Dave Britt founded nMetrics in 2005, they wanted to provide their customers with a full-featured network performance management solution that was affordable and easy to use. Today, Urquhart serves as nMetrics' CEO and Britt as its CTO.

"Issues surrounding network performance seem to be common in almost all of the organizations we encounter, be they corporate, government, or educational institutions," Britt says. "Being able to identify and monitor performance bottlenecks is key in being able to maintain good application response times for end users."

Urquhart adds, "The nMetrics product lineup provides network operators with instant visibility of network and application traffic, which allows them to rein in the amount of time needed to correct network anomalies."

Unlike similar offerings from other providers, nMetrics supports applications developed around Web 2.0, voice, and video. "Session monitoring at remote sites can provide unprecedented visibility into what have traditionally been network blind spots," Urquhart says. "This capability is becoming much more important with branches running applications that may no longer be visible at the data center, such as SaaS-type applications."



Company Name: nMetrics

URL: www.oasyscorp.com (U.S. contact);

www.nmetrics.net (Australia)

Location: Headquartered in Sydney, NSW, Australia

Date Company Founded: 2005

Interesting Fact: nMetrics' network and application monitoring solutions support applications that are developed around Web 2.0, voice, and video.

driven by customer needs is that the nMetrics management team has been able to work closely with its development staff to produce lower-cost solutions that are also pertinent to marketplace requirements.

"We started with just a few customers," Britt explains. "Steve and I had contacts in the industry from our previous careers and were able to work with them to develop a product that was comparatively low-cost but completely relevant to customer needs."

Thanks to this customer-centric philosophy, nMetrics was able to develop easy-to-operate monitoring solutions that could provide detailed reports almost immediately upon deployment without impacting established networks or network speed. "We spent many years customizing reports and getting the product just right for the market," Britt says. Since then, with solutions deployed on some of the world's largest and most sophisticated networks as well as small to medium-sized entities, nMetrics has established itself as a leading player addressing the wide spectrum of network monitoring needs.

Taking To The Clouds

Britt contends that the recent advances and continued saturation in cloud computing amplify the need to maintain optimum network performance. "The range of services and applications offered in the cloud are so diverse, and business so dependent on the ability to access these services, that network performance monitoring is now as important an element as ever in assuring delivery," Britt says.

"While the requirement for effective network performance monitoring has existed for many years, it is becoming a critical component to business as we see IT environments change through the adoption of cloud technologies and virtualization," Britt says. "As requirements change, it is easy to have the cloud provider simply provision more, or perhaps less, resources to allow us to get the job done. As a result, we will accordingly see the subject of network performance monitoring continue to rapidly grow." ■



An Upstart Advantage

According to Britt, one of the advantages of being founded as a startup business

FEATURE PACKAGE

An SMB-Friendly Data Center

Data Foundry's New Texas 1 Facility Makes Colocation Affordable

by Julie Knudson

• • •

SMALL AND MIDSIZED BUSINESSES looking for colocation providers often have to choose between service and cost. But at Data Foundry's new Texas 1 data center in Austin, SMBs can enjoy affordable access to a Class A facility and top-tier services. Founded in 1994, Data Foundry "likes to service those small and medium-sized

housed in individual enclosures within the structure, rather than being placed in an outdoor yard.

Ensuring client security was also a crucial element during the design phase. "There's a security zone around the facility with a guard booth at the front entrance, so the first layer of security begins at the curb," says Edward Henigin, CTO at Data Foundry. "You



Smaller customers sometimes find themselves crammed into odd, leftover pieces of data center real estate, but that won't be the case at Texas 1. "That's part of the desire of smaller to midsized businesses—to have a nice, comfortable working environment and not be ushered into a tight area of the facility," Menking says. The flexible space plan within Texas 1 allows additional hard wall separations and security solutions to be implemented as customers' needs change. "From the small cabinet up to those midsized deployments, we're trying to give you that comfort and security that you wouldn't normally get in a typical colocation facility," Menking says.

Focus On People

By focusing on the needs of the people running the facility, Texas 1's design makes operations and maintenance activities more efficient. "We believe that a large part of making a facility reliable is operating it and maintaining it well," Henigin says. "It's not [just] designing and building it well, but you also have to run it well, and there are elements of the design that you can do to make it easier to run well." Maintenance areas at Texas 1 are clean and conditioned, which contributes to increased life spans on parts and components. It also creates a better working environment for the engineering and maintenance teams. "The staff who come in and do maintenance on the systems are working in a comfortable environment," Henigin says. "They're not stressed, they're not rushing, and they're able to get things done."

Consideration has also been given to customers' IT groups who may need to work onsite. "We wanted anybody and everybody to feel comfortable and secure working within our facility," Menking says. The office space within the building can be used for short- and long-term durations, and comes with a suite of amenities including showers, break rooms, and lounge areas.

Texas 1's combination of competitive pricing, efficient design, stringent security,

businesses that want to have the same benefits of the larger deployments, but don't necessarily have the size or the requirements to justify it," says Shane Menking, Data Foundry's president and CFO (www.datafoundry.com). "We've built this data center to be flexible. We're bringing all of the engineering and design and resiliency down to the cabinet level."

The Purpose-Built Facility

The first building in Data Foundry's planned 40-acre Data Ranch, Texas 1 is a 250,000-square-foot data center slated to open this month. Blending careful design, multisystem redundancy, world-class security measures, and a location that's outside nearby natural disaster zones, Texas 1 is more than just another data center.

Many large data facilities are repurposed warehouses or light industrial shell buildings with ramped-up power and cooling capabilities. That's a fine solution for some, but Data Foundry didn't want to offer customers a me-too type of space. Instead, it designed its new facility from the inside out. "It's the only purpose-built, from-the-ground-up data center in the entire central Texas region," Menking says. "We designed every part of the facility for the purposes of being a data center."

Design features include robust security facilities, logical utility pathways, and a functional and customizable interior layout, all wrapped up in a highly durable structure. Built from sturdy, 10-inch-thick, 25-foot-high precast concrete walls, the building has a wind rating of 160 miles per hour, and even the generators benefit from the envelope's protection—they're

have to be authorized to come into the parking lot off the street." Every facet of the site was planned with security in mind, from man traps at each entrance down to the location of the loading dock. "We put our loading dock up front, so the security for the loading dock is covered by the same people who are checking people at the front desk," Henigin says.

SMB-Centric Colocation Services

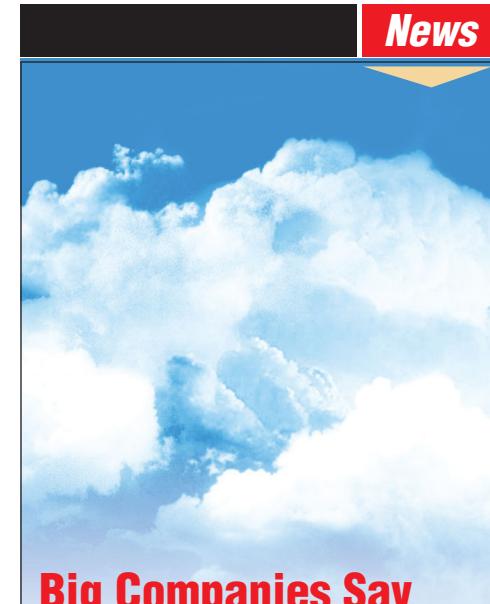
Unless you plan to occupy many thousands of square feet, it's difficult to find a colocation provider that gives you customized support in a space you can call your own. One way Data Foundry is changing that is by leveraging flexible spaces instead of predefined rooms. "Most facilities, when they're designed and con-

"There's a security zone around the facility with a guard booth at the front entrance, so the first layer of security begins at the curb."

- Data Foundry's Edward Henigin

structed, decide in advance how many rooms they're going to have, how big each room will be, and how much power is delivered to that room," Henigin says. "At the Texas 1 facility, the master data hall can be segmented into dedicated private rooms, sized for that customer, with just the right amount of power and cooling. That's really unique."

and a comfortable environment has resonated with Data Foundry's customer base. "When visitors tour Texas 1, they are surprised at the superior level of quality and attention to detail we are able to offer at market prices," Henigin says. "When compared to other facilities based on quality, service, and pricing, Texas 1 is a clear choice." □



Big Companies Say "No Thanks" To Public Cloud Storage

The adoption of cloud services is growing, with companies of all stripes leveraging software, platforms, and infrastructure as services. One of the benefits of the cloud is a virtually unlimited amount of storage, as companies such as Amazon, with its oceans of data center capacity, offer offsite storage in the cloud for organizations of every size.

Because managing storage—which includes short- and long-term storage needs from email to archiving—is expensive, time-consuming, and requires expertise, it would seem a tantalizing prospect for larger enterprises to leverage cloud storage.

However, according to a study by market research firm TheInfoPro, most big companies do not have public cloud storage in their plans. In fact, just 10% of larger companies surveyed indicated that they had plans to implement public cloud storage. Another 3% answered that they weren't sure, which leaves an overwhelming 87% with no plans for public cloud storage.

In a seemingly odd finding, however, plenty of those companies had implemented or were planning to implement other types of cloud services, which proves that many companies avoid public cloud storage yet still embrace the cloud.

"The key reason revolves around performance/reliability," says Marco Coulter, research director for storage and cloud practices at TheInfoPro.

"In the last storage study, we asked, 'Are you thinking of cloud storage services?'" Coulter says; this time around, the researchers were more specific, leading to more specific findings. For example, Coulter notes that they expected companies to remain shy about public cloud storage for the most sensitive data, but the study found that organizations weren't interested in public cloud storage even for the lowest tiers of data, such as archiving.

Keeping Data Storage Private

Companies weren't nearly as shy about implementing private storage clouds. Coulter notes that many big companies already have storage infrastructure in place, and building a private cloud presented few obstacles.

As Coulter points out, whether a larger organization had (or was planning to implement) a private storage cloud or simply stuck with traditional local IT storage, in both cases, the need for public cloud storage was obviated because they already had ample storage infrastructure in place.

Also of note, the study found that midsized enterprises were even less statistically likely to adopt public cloud storage—just 9% of mid-sized companies surveyed had plans for it.

by Seth Colaner

SMBs Expect To Allot More Money To The Cloud

The cloud computing market shows no sign of slowing its growth, according to research from AMI-Partners, and the company estimates that small to midsized businesses will continue to allocate more IT spending dollars to cloud-based services. SMBs currently allocate about 10% of their technology budgets to cloud services, according to AMI. However, by 2015, AMI predicts that SMBs will reserve 15% of their budgets for the cloud (an estimated \$49 billion spent).

Donald Best, AMI-Partners analyst, attributes the growth in cloud spending to three reasons: the availability of super-broadband (greater, more reliable bandwidth), more compelling service and pricing models, and the economic situation causing SMBs to seriously consider the cloud because of lower prices and no capital expenditure. Best says total SMB spending is forecasted to rise along with the portion allotted to cloud services.

Bundle & Save

AMI's research also shows that SMBs prefer to bundle cloud offerings from one provider rather than purchase a single service. Of the SMB decision makers surveyed, 38% specify a strong preference for SaaS purchased as part of a bundle; a mere 11% are interested in a single or standalone application.

The bundling process will eliminate the hassle of working with multiple vendors, and as Best puts it, the business will only have "one throat to choke." Best says, "[The] main reason in choosing one vendor is the ability to manage one vendor. A large portion of SMBs, especially small businesses, don't have full-time IT staff, and managing a single contract, SLA, etc., is more efficient than multiple."



A possible negative to this approach, Best says, is that you have to take what the supplier offers as part of the bundle. For example, he says, you may prefer a particular company's CRM offering, but your provider may only offer a different company's product.

According to Best, IT managers and those making purchasing decisions at SMBs have many options for cloud services, and there are a few ways to find the best option for your organization. First, shop for attractive bundles before buying any specific cloud application. Second, negotiate tight service agreements and upgrades before choosing a vendor. And third, make sure the bundle supports mobility, including smartphones and tablets.

by Antona Beckman

Open Source Update

Fears About Using The Software & Tools Are Often Unfounded

by Jean Thilmany

OPEN SOURCE CONTINUES to gain interest among enterprises, but concerns about support, stability, and security still abound.

Key Points

- Customer support for open-source systems can be easy to find.
- Open-source systems may be free, but that doesn't mean they're cheaply created.
- Changes to the system need to be shared with all system users when those changes are commercialized. Users can make modifications for internal use without needing to share those changes with all system users.

But those worries are overblown, says Frank Wiles, president of Revolution Systems (www.revsys.com), a consulting company that offers help with open-source systems. "From an IT perspective,

at FeeFighters.com, which uses many open-source systems. "The pros are that it's much lower priced, more reliable, [and more] customizable, and we believe that software should be a commodity," Mohnot says. "Cons are that sometimes we want to be able to talk to a customer service person, and we don't have that ability. Sometimes proprietary software has more features and is more user-friendly, too."

Many small to midsized enterprises are reluctant to turn to open source because IT managers fear lack of customer support should they need it, Wiles says. "They think, 'if I have a problem with commercial software, I can call the developer.' But have you ever tried to call a big developer?"

The nature of the open-source software means it can be easier to find people who know the system and to ask them for help with support issues, Wiles says. Because it's an open standard, many people have access to that standard and have tinkered with it.

"I feel like commercial software is akin to if you bought a car with the hood welded shut and you could only take that to the vendor's dealership," he says. "But open source

product based off UltraVNC, says Nathan Corbier, the company's CEO.

The product is free, can be modified as needed, and works as well as the \$100 per-month, per-license seat of a similar product, Corbier says.

After that installation, the enterprise began shopping for a field management system, which tells technicians of upcoming support tickets and reports successful or still-pending jobs.

"After finding an open-source solution . . . we found it wasn't enough," Corbier says. "So, one weekend and a 24-pack of Mountain Dew later, we had modified the program to serve our needs," he says. "Because it's open source, its source was instantly available to us. The developer is making a new version but still had time to help us with questions on his development forum."

Also, the use of open-source systems allows enterprises to price their services, particularly hosted-software offerings, competitively, says Cedric Halbach, president of Enterprise Technology Services (www.entechserv.com). Software can be hosted on open-source technology, he says.

"Licensing issues are only triggered when you share changes to systems—it has nothing to do with making changes internally. If you share changes with others, you have to share them with everyone."

- *Revolution Systems' Frank Wiles*

people's concerns with open source are very unfounded," Wiles says. "It's the FUD factor: fear, uncertainty, and doubt. People say, 'If I put my secret corporate data on a Linux file server, I have to share it,' and that's not even close to true. It's like saying Microsoft owns information if it's on a Microsoft file server," he says.

"Licensing issues are only triggered when you share changes to systems—it has nothing to do with making changes internally," Wiles says. "If you share changes with others, you have to share them with everyone."

Licensing Terms

By using an open-source system, an enterprise agrees to open-source licensing terms. So it's perfectly fine for IT managers at an enterprise using an open-source Web server to customize the software to meet their particular business needs. As long as they don't share those changes with someone outside the company, they need change nothing about their license, Wiles says.

"But when you try to take that change and sell it to another company, you have to make those changes public so the rest of the open-source world can use those changes," Wiles says. "It's more difficult to commercialize those changes than it would be in a commercial world or if you built it yourself from scratch."

The pros outweigh that con, says Sheel Mohnot, director of business development

means you can do your own oil changes or take it to the guy down the street for that."

Wiles recommends that IT managers looking for help with an open-source application hire one of the people who built the software. These people are usually easy to find via the Internet and can troubleshoot the application long distance. They usually only need to work on the application for a short period of time.

Also, some consultants work exclusively with open-source software and can offer support. He recommends finding one for help in customer-support situations. Likewise, turn to development forums.

Making Modifications

Ground Zero Group has used open-source products since 2004 for Web design and hosting and for IT support. The IT department uses an open-source

His company uses open-source applications because of their reliability and price. "Security, available apps, [and] scalability are all bonuses to open source," Halbach says.

Don't Fear The Free

Revolution Systems' Wiles says many IT managers investigating open source equate free with lousy. But nothing could be further from the truth. "The free aspect is just going back to computers' roots," he says. "When open source got started, it was open because you needed to be able to fix and do stuff to it, and Microsoft changed to closed-source commercial software and were successful at it, and that's how that whole commercial system started."

So, if Wiles has one thing to leave potential open-source users with, it's this: Don't fear free. □

Ask An Attorney

For enterprise IT managers who want to better understand when making changes to the open-source system may mean sharing those changes, when is it time to consult an attorney?

That depends on the size of the enterprise, says Frank Wiles, president of Revolution Systems (www.revsys.com).

"If you're small, I would say don't worry about it if you're making changes you don't intend to commercialize. But at large companies, you may want to talk to an intellectual property attorney to help you navigate what you should and shouldn't be doing," he says.

"If you're building software on open source, you may have some concerns, but if you're using open source and don't have programmers making changes, you have nothing to worry about."

CASE STUDY

Making Real-World Differences

Palo Alto Networks Next-Generation Firewalls Help Customers Reduce Threats, Support The Business

by Blaine Flamig

AS PALO ALTO NETWORKS aptly describes, traffic entering a traditional enterprise network is similar to the roughly 7 million cargo containers entering U.S. seaports each year. Because of the sheer volume of containers, few undergo heavy scrutiny. The priority instead is speed, or getting the containers onto ground transportation ASAP. When extra scrutiny is applied, it typically only occurs at those ports dealing with the most containers.

Similarly, traditional enterprise networks only address portions of all network traffic (Web and email), leaving hackers to exploit what's unprotected. This includes encrypted and evasive traffic, which Palo Alto Networks (www.paloaltonetworks.com) estimates make up 23% of all network traffic. Generally, when companies apply additional security layers, it's only to Web and email traffic—an approach that slows down business for security's sake without making the business any more secure.

The solution to the dilemma is implementing a next-generation firewall that inspects all traffic, content, and applications, including Facebook, WebEx, BitTorrent, Twitter, and others being increasingly relied upon. For four years, Palo Alto Networks has provided next-gen firewalls featuring its App-ID, User-ID, and Content-ID technologies that combine to provide previously unavailable visibility and control over apps, users, content, and actions compared to traditional firewalls, which typically only control at the port, IP address, and packet levels.

Use The Apps You Want

Palo Alto Networks customers reap many benefits by using the company's next-gen firewalls, including the ability to let employees use the apps they want to use without compromising enterprise security. Other benefits include a decrease in the frequency and quality of threats; better company-customer communication; better control of bandwidth usage; expanded email usage without sacrificing security

Palo Alto Networks Next-Generation Firewalls

Feature App-ID, User-ID, and Content-ID technologies that combine to provide previously unavailable visibility and control over apps, users, content, and actions.

"We had technology that provided the type of security that was adequate and fulfilled what our needs were, but as we now look into the future and look to identify and harness today's technology at a rate of today's speed, Palo Alto is a solution that provides that," says Rich Fiore, director of IT infrastructure at Naperville Community Unit School District 203.

(866) 320-4788
www.paloaltonetworks.com

against malicious links, attachments, etc.; and simplified management.

Nir Zuk, Palo Alto Networks CTO and founder, says companies traditionally have built a network first and then tried "to figure how to fit security there." That security "was good five, 10 years ago when all we were doing with the Internet was Web browsing and email," he says, but today, with applications such as WebEx, SharePoint, Facebook, Twitter, and others,

firewalls helped 24 Hour Fitness enable its employees to use social networking technologies to communicate with customers while providing other new capabilities, such as visibility into SSL-encrypted packets and controlling apps at the ID level.

At Naperville Community Unit School District 203 in Illinois, Rich Fiore, director of IT infrastructure, says users consistently asked IT, "If I can do this at home, how come I can't do this here?" Using Palo Alto

Networks firewalls turned the question into reality. "Originally, we had a stateful firewall," Fiore says. "We had technology that provided the type of security that was adequate and fulfilled what our needs were, but as we now look into the future and look to identify and harness today's technology at a rate of today's speed, Palo Alto is a solution that provides that."

For Wilson Ye, senior manager of IT security for global law firm Paul Hastings, consolidation was a key factor in turning to Palo Alto Networks. Previously, the firm used separate firewall, IPS, and URL-filtering components. When it was time to replace the firewall, Ye says, the company

had to also consider the "quite expensive" question of renewing or replacing the other technologies and appliances. Beyond saving money, Palo Alto helped simplify the firm's entire appliance-based model while providing detailed Internet-usage reports. "Looking at Palo Alto Networks compared to everyone else is very different," Ye says.

All Or Nothing

Jorge Mata, CIO of Los Angeles Community College District, faced a situation in which the district's libraries were bound by law to provide access to a wide assortment of material. "When we looked at a lot of technology, their solution was again, blocking, 'we're going to stop you from doing that.' But you can look at an application, and 99% of it is OK. There are just a couple things you don't want happening. Most of the technology couldn't deal with that. It was all or nothing," Mata says.

Palo Alto Networks changed that scenario. "Before Palo Alto, we had to basically stop [access] altogether because we had no way to contain it . . . by deploying Palo Alto we could activate but put in a rule saying, 'You can go there and consume all you want but you just can't get infected.' That was revolutionary for us." □



the network security company™

"I'm not sure the security we're trying to fit into our networks is the right one."

Moreover, in recent years, "IT has found itself more and more saying 'no' to the business because of security reasons. Meaning the business wants to do something, but IT says, 'Sorry, we cannot do that because of these security concerns,' which to me is not acceptable," Zuk says. Using Palo Alto Networks' next-generation firewalls, organizations don't have to make such compromises, as real-world examples indicate.

Insight Gained

Concord, N.H.-based Capital Region Health Care turned to Palo Alto Networks after it recognized early on that "Port 80 and 443 had to be open for anything to work" but "everyone was starting to funnel their applications over those ports," says Mark Starry, director of enterprise architecture and security.

Initially, the organization tried a different single-vendor solution that proved difficult to use and centrally manage. Upon adding a Palo Alto firewall to other protection devices already in place, Capital Region Health Care was "really surprised with what we saw was going over Port 80 and what wasn't being blocked by the other devices we had," Starry says.

Palo Alto Networks also helped Capital Region Health Care enable Facebook as a read-only application for its employees while limiting chat, gaming, and other capabilities. Palo Alto helped reduce the up to seven threats Starry and his team were addressing each week to zero, meaning reduced stress and more time to explore such new endeavors as introducing iPad usage to the organization.

Support The Business

At 24 Hour Fitness, past policy was to restrict Web usage by club employees to only specified sites, says Justin Kwong, senior director of IT operations. Implementing Palo Alto Networks' technologies enabled 24 Hour Fitness to let employees interact with customers via Facebook and Twitter while retaining site-blocking abilities.

"At the end of the day, you have to support the business," Kwong says. If not, employees will circumvent security in the name of productivity. Enlisting Palo Alto's

FEATURED COMPANY

Network Help From Beginning To End

Integration Partners Offers Peace Of Mind

by Blaine Flamig

THERE'S SOMETHING TO BE SAID about a company that accepts responsibility for its customers' growth without making excuses. Such is how Integration Partners operates. A full-service voice and data network engineering firm serving healthcare, education, manufacturing, financial, retail, legal, government, service provider, and other industries, the Massachusetts-based company has offices in New York, New Jersey, and Indiana. Alliances with manufacturing partners, however, enable the company to serve clients globally via a network of certified partners, including Palo Alto Networks, provider of next-generation firewalls.

"When you choose Integration Partners, you get engineers who have received the highest certification from the technology vendors we work with," says Mike Tavares, Integration Partners' director of engineering (www.integrationpartners.com).

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"We design your network solution in close partnership with your IT and business teams. We test your functionality thoroughly at our facilities before we go live, then we monitor and stand behind your network. We simply won't rest until your network performs so well, you never have to worry about it." The company's engineers also "own the problem" without any "finger-pointing—ever," Tavares says.

Meet Your Requirements

The majority of solutions Integration Partners provides can fit into small, mid-sized, and large enterprises and provide an "end-to-end secure network and voice infrastructure to meet the enterprise's requirements," Tavares says.

"A key component of our offering is the Palo Alto Networks next-generation firewall, which not only has the flexibility and ease of management, but most importantly the robust features and performance that today's enterprise requires," Tavares says. Currently, Integration Partners, founded in 1999, is working to integrate Palo Alto Networks' next-generation firewalls into its existing managed network offerings.

IT managers enlisting Integration Partners' help to implement next-generation firewalls can count on "technical expertise and commitment to customer satisfaction, coupled with our experience in this type of application and specific industry," Tavares says.

SIX QUICK TIPS

Build Your Spam Arsenal

A Proactive Approach Can Save Time & Money

by Chris A. MacKinnon

• • •

BILL GATES ONCE PREDICTED that the world would be spam-free by 2006. Five years later, MessageLabs reports that the global ratio of spam in email traffic decreased by 6.4% between March and April to 72.9% (or 1 in every 1.37 emails). These figures, though a promising sign, point to the continued need to have a good antispam solution in place. Here are a few tips to help boost your spam arsenal.

Awareness Is Half The Battle

Remembering the role of social engineering in spam and malware campaigns and being vigilant about user awareness programs both go a long way in the pursuit of spam-busting. Rebecca Steinberg Herson, vice president of marketing at Commtouch (www.commtouch.com), says scams and malware in the guise of holiday sales or major news items can trip up enterprise users because, as she puts it, "Who doesn't want to save 50% on a graduation gift or watch a video censored from CNN?"

Steinberg Herson adds, "It's important to help your company's employees to beware of offers that seem too good to be true, because they usually are. Even if you have fail-safe spam filters on your corporate mail

server, if your users are checking their private Web mail on their work computers, your users (and your network) are at risk."

Ronan Kavanagh, CEO of SpamTitan Technologies (www.spamtitan.com), says clear policies, along with improvements in user education and awareness supported by robust preventive tools, are the best way to beat phishing in all its forms.

Network security alone is not discouraging the number of phishing attacks, he says, and social networking in the workplace has given phishers an "even bigger pond to phish in."

Phishing protection tools use a multilayered approach. Kavanagh explains, "Malware detection mechanisms are regularly enhanced to keep pace with the ever-changing threat climate. Scan engines contain a comprehensive set of phishing signatures, support for SURBLs (spam URL realtime blocklists) and heuristic rule tests."

Know Spammer Techniques

Knowing spammer behavior is important. Kavanagh says because major world events and public holidays are fuel for spam, trending topics such as the recent British royal wedding or Osama bin Laden's death are nirvana for spammers. "Such events generate enormous levels of online interest worldwide, providing

scammers with plenty of potential new victims. By piggybacking news headlines, they can increase traffic volume to their Web sites," Kavanagh says.

According to Nicholas Sciberras, product manager with GFI Software's security business unit (www.gfi.com), defending against a popular technique known as "directory harvesting" also helps boost a company's spam arsenal. "Spammers often try to guess recipient addresses by sending tons of emails using common names in email addresses at a domain. Antispam solutions can counteract this by checking the validity of all the email addresses included in the mail sent, via a query to Active Directory; if they are not all valid, it flags the mail as spam," Sciberras says.

One other helpful technique is greylisting, an antispam technique used to identify spam emails originating from non-RFC-compliant mail servers, which are often utilized by spammers. "For each new SMTP transmission, antispam solutions can record the sender, recipient, and sending mail server's IP address (aka triplet) and rejects any emails with a temporary failure message. Compliant email servers try and resend the message after a few minutes, which causes their triplet to be confirmed and connections with the same triplet are no longer rejected," Sciberras says, adding that non-compliant mail servers typically do not resend the message.

Use Intelligent Solutions

Spamming techniques have become extremely intelligent in recent years. For this reason, Kavanagh says it's critical to protect the network by blocking spam with a gateway solution before it reaches the inside. "Left unchecked, spam can still create huge problems for businesses," he says. "User mailboxes may be overrun, which ultimately leads to lost productivity. It can also contain viruses capable of infecting the entire network." Gateway solutions are designed to catch spam before it ever reaches users.

Commtouch's Steinberg Herson says spam filters should also have a cloud-based element that provides additional threat intelligence. "Some spam filters need to receive periodic updates of signatures or rules, but others will constantly poll the cloud in real time for the most recent data," she says. "This cloud-based polling will speed user protection, as it identifies and blocks threats before they ever reach your network and will lighten your infrastructure needs since you won't have to store nearly as many signatures."

Spam-Fighting Tactics

As most of today's spammers spoof email addresses, it is important to be able to check whether an email is genuine or if it has been sent from a forged sending

Best Tip:

Check Out Spam Traps

Nicholas Sciberras, product manager with GFI Software's security business unit (www.gfi.com), says spam traps are a useful tactic in combating spam. A spam trap is a valid email address used to identify spam messages. "Spam techniques are constantly changing, and spam traps are used by anti-spam engine providers to detect new spam trends and provide quick updates to their engines. This is a very useful tactic."

Most Productive Tip:

Use A Personal Filter

Rebecca Steinberg Herson, vice president of marketing at Commtouch (www.commtouch.com), says one great way to increase productivity is to have users configure a personal filter ensuring that employees instantly file opt-in newsletters, mass mailings, and other time killers. "That way," she says, "they deal with the important messages in their inboxes and eventually get to the others."

address. GFI's Sciberras says this can be done via SPF (sender policy framework), which lets users test whether a particular email originates from its claimed source.

"If, for example, a spammer falsifies an AOL address and tries to spam user A, he would need to connect from somewhere other than AOL. When user A receives the spammer's mail, it appears to be sent from an AOL address, namely, forged_address@aol.com. However, the recipient does not need to take the sender's word for it: Instead, user A can ask AOL if the IP address comes from their network," Sciberras says. Through SPF, this checking can be done automatically, thereby eliminating spam that originates from spoofed senders.

But according to SpamTitan's Kavanagh, SMEs cannot live on SPF alone. He says a recent SpamTitan survey claims 43% of SMBs thought SPF was a method that can be used to stop spam from being sent using unauthorized domain names. "Almost 52% of organizations surveyed did not know SPF only stops spammers from forging the 'From' field in a message, and SPF does not stop spammers from sending emails from their member domains."

Kavanagh says organizations need to remain vigilant and follow proven guidelines such as not clicking links or attachments in unsolicited emails. "It is vital that people keep their security solutions valid and up-to-date so that they can secure their organizations and improve network security." □

BONUS TIPS

■ **Check RSS feed.** Rebecca Steinberg Herson, VP of marketing at Commtouch (www.commtouch.com), says you can stay up-to-date on the latest email threats through RSS feeds. Most top-tier technology providers offer free information about the latest threats and

scams your users can expect to see in their inboxes. Simply subscribe to their blogs or Twitter feeds, and you can be the first to know when a new outbreak may threaten your users.

■ **Reputation matters.** Use a reputation service that can

offload a huge amount of traffic before it ever reaches your mail servers, based on the reputation of the sender, Steinberg Herson says. For example, zombie (aka bot) senders shouldn't be allowed to send email into your network.

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Scrub You
Smart Storage Examinations
By Clinton H. Johnson

TECH & TRENDS
There are many benefits to having a reliable storage system, but there are also many challenges. In this section, we'll look at some of the most common challenges and how to overcome them.

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Are You Prepared For A DDoS Attack?

Tips For Defending Your Enterprise

by Mike Chapple

WHEN YOU THINK OF HACKERS, you probably imagine shady individuals seeking to steal identities and other sensitive information. In fact, many hackers focus on undermining the confidentiality of information. However, others are satisfied to simply disrupt legitimate access to data. These attacks against information availability are known as DoS attacks, and they can be just as disruptive to your enterprise as an information-stealing attack.

Particularly sophisticated DoS attacks leverage large networks of compromised computers, known as botnets, to simultaneously attack a Web site from many diverse geographic locations. These attacks, known as DDoS (distributed denial of service) attacks, are particularly insidious because of the difficulty of distinguishing them from legitimate network traffic. Recent high-profile attacks by the hacker group Anonymous against Visa, MasterCard, and PayPal underscore the importance of preparing your enterprise to survive a DDoS attack.

DDoS Revealed

DDoS attacks occur when a network receives more incoming data than it is able to handle, says Pierluigi Stella, CTO of Network Box USA (www.networkboxusa.com). The rate of traffic required to conduct a successful attack depends upon the bandwidth of the network and on the speed of protection devices. "The consequences are always the same," he points out. "Internet connectivity comes to a complete halt. Users cannot do anything on the Internet. Basically, it is like a rush hour traffic jam."

Not all DDoS attacks are targeted at Web sites. Enterprising hackers may target other critical infrastructure components, such as an organization's DNS controllers. These devices are responsible for translating between the user-friendly domain names (such as www.processor.com) and machine-friendly IP addresses (such as 63.70.164.32).

Michael Montecillo, senior threat analyst with IBM's X-Force, relates a story of an organization that fell victim to such an attack. One of his clients suffered

from a DNS amplification attack, where the attacker sent spoofed DNS requests with the victim's IP address as the fake source. "Due to the fact that the DNS response can be much larger than the request, the spoofed IP could receive a large response," he explains. His client received a large volume of these attacks at regular intervals during peak hours, disrupting the client's ability to conduct business.

Are You At Risk For A DDoS Attack?

Avishai Wool, CTO of AlgoSec (www.algosec.com), points out that these attacks are rarely carried out with a profit motive. "DDoS attacks are mostly destructive and bring little financial gain to the attacker. Thus the targets are typically sites that stand for ideas," he says. Organizations with natural enemies are popular targets for DDoS attacks. "Typically these would be government sites, sites promoting political or ideological viewpoints, and high-profile sites in general," Wool adds.

Although most DDoS attacks aren't revenue-generating schemes, that's not true in all cases.

"DDoS attacks are mostly destructive and bring little financial gain to the attacker. Thus the targets are typically sites that stand for ideas."

- *AlgoSec's Avishai Wool*

Countermeasures

There are a number of steps that you can take to prepare yourself to weather a DDoS attack. Here are a few things you can do:

- Overprovision network bandwidth to absorb smaller attacks.
- Maintain a disaster recovery plan that includes provisions for alternate network connections.
- Work with your ISP to create high-level network filters to block malicious traffic before it reaches your network.

Protecting Your Enterprise

What can you do to protect your enterprise from DDoS attacks? John Bambenek, a computer forensics consultant, suggests that an infrastructure risk analysis is the best place to start. "That will help dictate what, if anything, to spend money on," he says. "Anonymous, for instance, was successful in their attacks on organizations not because their tools were sophisticated but because the infrastructures they attacked were brittle. They tried to hit Amazon and PayPal and failed. They hit MasterCard and knocked their main Web site offline."

Your first instinct for protecting your enterprise from an ongoing attack might be to set up filters that block the unwanted traffic. This is usually unsuccessful not only because it is difficult to distinguish attack packets from legitimate requests, but also, as Stella points out, "because the intent of the attack is to overwhelm the devices that are scanning traffic. The number of packets is such that the device defending the network will not be able to keep up."

Key Points

- DDoS attacks are difficult to detect as they occur when a network receives more incoming data than it can handle.
- The best defense against an attack begins with a risk analysis; that way you identify potential threats before deciding where to spend your resources.
- Attacks are evolving, becoming larger, stealthier, and more sophisticated.

Although your network may not have sufficient resources to protect against a DDoS attack, you might be able to find help from your ISP. It might be able to set filters at an earlier point in the network so attack traffic is rerouted away from your network. Be cautious when using this approach, however. Remember that the ISP's priority is the provision of service to all customers, not just you. The ISP may use a blunt filter that simply blocks all inbound traffic to your enterprise in an effort to protect its other customers.

And this could be just as devastating to your enterprise as an attack would be.

If blocking traffic isn't an option, Stella suggests two other techniques to protect your network. You could increase bandwidth to a level that can simply absorb the effects of a small-scale DDoS attack. Another option is to prepare secondary connections you can use to maintain Internet access during an attack as part of a disaster recovery plan.

If you're not already doing something about DDoS attacks, you're in good company. Danny McPherson, chief security officer at VeriSign (www.verisign.com), says that research indicates few organizations have DDoS protection in place to secure their networks, applications, and services from debilitating outages. He explains that this is a huge risk because "Attacks are evolving. They are becoming larger, stealthier, more targeted, and more sophisticated than ever—making them an even greater threat to companies of all types and sizes that conduct business online or have significant investments in their online brand and reputation." □

■ Health IT Boosts Hospital Bottom Lines

According to a Fitch Ratings survey of 291 hospitals, health organizations with advanced IT systems and a high quality of care are achieving greater revenue growth, serving more patients, and containing costs more effectively. The group's report, "Enhanced Accountability and Financial Performance," notes that ongoing healthcare reforms are accelerating the adoption of improved reporting and health-related IT investments in such areas as electronic health records, computerized physician order entry systems, and electronic prescription technology. The findings seem to validate the idea that current federal health IT incentive programs are having a positive impact.

■ Internet Explorer Continues To Decline, Benefiting Chrome & Safari

The latest figures from Net Applications show that Internet Explorer 9 has failed to boost Microsoft's share of the browser market, with

total IE market share down 0.84% in May. Its top competitor, Mozilla's Firefox browser, remained largely flat for the month, gaining a 0.08% sliver of the market share pie. Both browsers released new versions in March; IE9's share grew 1.8% in May, and Firefox 4 grew 4.6%, signaling a possible return

to growth for Firefox, which has been mostly flat for the past year. The big winners for the month were Apple's Safari, which gained more than a point to reach 7.3% of the market, and Google's Chrome, which grew 0.6% to claim 12.5% of the market.

■ Q1 2011 Server Sales Jump, IDC Says

IDC reports that factory revenue in the global server market rose 12.1% year-over-year to reach \$11.9 billion during the first quarter, which marks the fifth straight quarter that year-over-year revenue has grown. IDC says that server unit shipments jumped 2.5% year-over-year during the quarter, reaching 1.9 million units. That's the second highest quarterly total ever documented during the first calendar quarter of any year, IDC says. Volume systems saw an 8.7% year-over-year revenue increase, the midrange enterprise segment saw a 28.3% increase, and the high-end enterprise segment a 14.2% increase. Vendor-wise, HP held the top position globally with 31.5% factory revenue, a 10.8% increase year-over-year, followed by IBM with a 29.2% share and Dell with a 15.6% share. Oracle, completing its one-year anniversary of its purchase of Sun Microsystems, finished fourth with a 6.5% share, up 13.6% from a year ago.

■ Healthcare IT Expected To Grow By 24%

The U.S. healthcare IT market could see a 24% increase in growth between 2012 and 2014. And spending will likely reach \$40 billion by the end of this year. These statistics come from a new report, the "U.S. Healthcare IT Market Analysis," from RNCOS. The report also notes significant growth in the private sector, primarily brought about by mergers within the healthcare IT market. The report shows the healthcare industry already spends \$80 billion per year on IT and that physicians utilize mobile health apps primarily for educating patients, collecting data, and diagnosing symptoms.

Enterprises Plan To Adopt Tablets; Slow To Enact Strategies

Among the nearly 450 business and IT executives, managers, and professionals questioned in an April survey conducted by Dimensional Research and sponsored by Model Metrics, 78% indicated they plan to officially deploy tablets by 2013's end. Offsetting this is that only 51% have put an adoption strategy in place. Diane Hagglund, Dimensional Research principal, attributes the latter number to companies being content to support new devices such as iPads while the business tries them out to determine where they can add value.

"This group is deploying iPads at the same rate as those with a strategy, indicating confidence that business stakeholders will find value in deploying tablets in the enterprise," she says.

Dimensional Research found that although only 22% of respondents have officially deployed tablets, 72% of companies have tablets in use in their enterprises, with the 41% of iPads in use belonging to those who are using them on a trial basis. Of specific tablet models, 83% anticipate deploying iPads, with more than 50% choosing that model for its availability of productivity tools for business use.

Integrating Tablets In A Mobile Strategy

For the report, Dimensional Research asked participants if tablets offer compelling enough functionality to drive serious corporate adoption. "We've found that it's not whether tablets are ready for the enterprise, but whether enterprises are ready for tablets," says Dave Dahlberg, CMO at Model Metrics. "Functionally, [tablets] provide the same abilities as a smartphone with GPS, camera, etc., and screen size comparable to a small laptop with the ability to project presentations. It truly can be a one-stop device for a lot of business users."

Dahlberg says customers tell Model Metrics they "know mobility is the future" and want to deploy tablets but need assistance charting a mobile strategy. "It's not just about being able to read business email on the go or even accessing business apps," he says. "Companies can completely reinvent how they sell and interact with customers and manage their businesses with applications designed specifically for mobile use." Hagglund says one approach that enterprises are taking toward tablet adoption is viewing overall global deployments of various devices and working toward a standardization strategy across regions to figure out how to phase out older devices while still maintaining everyday mobile business use.

As for the 83% of businesses planning to deploy iPads vs. 34% planning to deploy Androids, Dahlberg says, "Apple took the lead with the iPad using its existing ecosystem and re-created the tablet market." He adds that Android-based tablets will gain ground, although how much ground is gained relies on the device's design, operability, ease of development, and quality of application ecosystems, "including enterprise-specific capabilities such as hardware data encryption and managing malware within its app store."

by Blaine Flamig



Safeguard Student Privacy

FERPA Provides Framework & Advice For Data Collection

by Mike Chapple

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THE U.S. EDUCATION DEPARTMENT recently announced the launch of a student privacy initiative that creates new resources for institutions seeking to comply with the requirements of FERPA (Family Educational Rights and Privacy Act). Although these resources are designed to provide the privacy framework for statewide data collection efforts, they also offer useful advice to educational institutions around the country.

While the initiative offers new guidance documents, none of this should be news to educational institutions or impact the way they manage their data centers, according to Gary Bahadur of KRAA Security (www.kraasecurity.com). "Educational institutions should already be protecting student data according to industry best practices," Bahadur says. He believes that the privacy challenge facing educational institutions is the quantity and diversity of data they collect, including basic demographic information to grades, career information, health records, and other sensitive information.

Technical Briefings

The first of the technical briefings, "Basic Concepts and Definitions for Privacy and Confidentiality in Student Education Records," offers a primer on the use of personally identifiable information in education records. It includes definitions of privacy and confidentiality, along with an overview of the regulations affecting institutions handling those records.

David Seidl, director of information security at the University of Notre Dame, finds this overview a helpful resource, especially for individuals who may have experience in information security and privacy but are new to education. "I plan to make the briefing required reading for all new members of my team," Seidl says. "It summarizes the state of privacy and confidentiality concerns clearly but with enough background to make the reason for each concern or legal requirement clear."

The second technical briefing, "Data Stewardship: Managing Personally Identifiable Information in Electronic

Key Points

- Educational institutions should consider developing an inventory of personally identifiable information maintained as part of student records.
- Federal law requires that institutions respect the privacy of student records and implement controls to protect that privacy.
- In addition to directly identifying information, institutions should consider the possibility that seemingly innocuous information might indirectly jeopardize student privacy.

The final technical briefing, "Statistical Methods for Protecting Personally Identifiable Information in Aggregate Reporting," provides guidance to institutions seeking to ensure that the release of grouped data does not inadvertently disclose private information. An example provided in the guidance encourages institutions to consider the case of a report outlining results of a statewide assessment test. If the report includes a statement that all fourth-grade students who are on individualized education plans at a particular school failed the exam, the information may inadvertently disclose private information if students at the school can identify the specific individuals who are on such plans.

Seidl encourages institutions to reflect upon this example and the guidance provided in the third briefing. "Many institutions understand directly identifiable data, like Social Security numbers and names, but not the danger of indirect identifiers that can identify an individual when taken as a group such as geography and age," he says. "The statistical guidance provides an approachable model for avoiding exposure of personal information due to indirect identifiers. Even better, it explains common flaws in statistical groupings that can expose individuals in an easily understood way." □

"Educational institutions should already be protecting student data according to industry best practices"

- KRAA Security's Gary Bahadur

Arne Duncan, U.S. Secretary of Education, outlines the purpose of this effort. He says data should only be shared with the right people for the right reasons and that there should be common-sense rules that strengthen privacy protections and allow for meaningful uses of data. To achieve this goal, Duncan's initiative includes the following components:

- Appointment of a chief privacy officer for the Department of Education. Kathleen Styles, who previously managed confidentiality and data stewardship issues for the Census Department, will be the first person to fill that role, and she will advise Duncan on matters of privacy and confidentiality, as well as data security.
- Creation of a national Privacy Technical Assistance Center that will create a privacy toolkit and serve as a one-stop resource for educational institutions at all levels ranging from preschool through higher education.
- The release of a series of three technical briefings providing guidance to states as they develop statewide longitudinal data systems under a federal grant program.
- Proposed changes to the FERPA implementing regulations that allow for the sharing of data among entities designed to allow increased data sharing among institutions.

Student Education Records," provides a roadmap to privacy compliance for educational institutions. The guide is based upon the principles of data stewardship, under which institutions commit that the educational records they maintain are accurate and complete; timely and relevant for the intended purpose; treated in a manner that ensures privacy, confidentiality, and security; and meet the goals of the institution.

The process advocated by the Department of Education includes the following steps:

- Conduct an inventory of all the personally identifiable information that the institution has stored, processed, or transmitted.
- Implement internal controls to protect personally identifiable information located during the inventory process.
- Provide annual notice to individuals about the existence of educational records and their privacy rights.
- Conduct audits of the information inventory, data integrity, and internal controls.

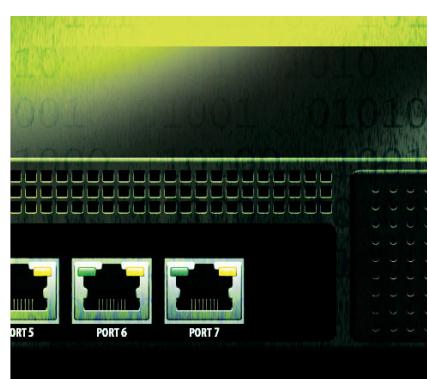
Seidl says this is good guidance for educational institutions. "The document outlines a process that would be helpful both for institutions developing a privacy infrastructure from the ground up and those assessing the effectiveness of existing principles," he says.

Fair Information Practice Principles

The technical briefings that were created as a guide for state education institutions as they develop data systems include a restatement of the Fair Information Practice Principles outlined by the U.S. Department of Homeland Security and Chief Information Officer of the United States. These principles include:

- Transparency
- Individual participation and redress
- Purpose specification
- Data minimization and retention
- Use limitation
- Data quality and integrity
- Security
- Accounting and auditing

BUYING GUIDE



BUYING TIPS:

Unified Threat Management

by Marty Sems

UNIFIED THREAT MANAGEMENT incorporates a raft of network security technologies previously sold separately, such as intrusion prevention, spam filtering, and VPN. Not only does well-coded UTM keep disparate components from conflicting with each other, it gives them access to each other's expertise for better protection.

Here's a look at major features to keep in mind if your enterprise is planning to upgrade its UTM appliance.

Perimeter defense. If you think of a UTM as a castle, its firewall component is its moat. Pierluigi Stella, CTO of Network Box USA (www.networkboxusa.com), recommends that a UTM appliance have at least SPI (stateful packet inspection) capability. Better yet, he says, is a hybrid firewall with SPI, proxy, and packet filtering features.

Additionally, the UTM must come with intrusion detection and prevention systems. The IDS/IPS should be inline with

the firewall and fully integrated with it to better stop threats at the edge.

Anti-everything. "Hackers use all kinds of ways to get in," Stella says. "You need to have protection against all of them." This means active safeguards against spam, phishing, Trojans, worms, and so on.

Buyers' Checklist

- Effectiveness.** How well does the appliance block malware and network threats, known and unknown?
- Performance.** Is the system fast enough to have minimal impact on network throughput?
- Price.** Beyond the purchase price and cost of initial, professional configuration, what's the ongoing subscription cost of remote management?
- Reliability.** If the UTM comes in an appliance, does it have high availability features?

First, Stella says, a good UTM employs multiple antivirus engines with robust, real-time protection against zero-day attacks. The antivirus should cover multiple protocols. An additional ability to scan encrypted protocols, uncommon today, will become more important this year, he adds.

Also, Stella says, look for products from vendors that don't "dumb down" their low-end models intended for branch and remote offices. Although entry-level UTMs may provide proportionally more modest throughput and concurrent connection figures, he says, "it is very important that the technology offered for the small offices be exactly the same as that offered for the main office."

User-related protection. A UTM must provide policy enforcement, detection of hidden and/or compressed attachments with potentially dangerous payloads, and server protection that leverages the firewall and IDS/IPS.

A Web access policy is also key, Stella says, as is secure VPN access with both IPsec and SSL support for site-to-site and roaming scenarios.

Continuous vendor support.

After dedicating a skilled, onsite technician or two to professionally configure your new managed UTM to protect your network, the vendor must also monitor and manage the appliance all day, every day. This includes proactive updating instead of waiting for the devices to "check in" every so often.

"The Internet moves too fast for updates to be pulled from the

Key Terms

Appliance. A standalone server for running a particular application, such as UTM.

Managed. An appliance that a vendor remotely monitors, updates, and changes.

UTM (unified threat management). Software (often installed on a managed appliance) that seeks to comprehensively block malware and network threats through features such as a firewall, antivirus, antispam, intrusion prevention, VPN, access policy enforcement, and more.

devices. Push updates are now a must . . . to reduce exposure to zero-day threats."

True integration. A UTM should be a team effort, Stella says. All of its formerly disparate features must be integrated with each other. As examples, Stella says that just as the firewall and IPS should work closely together, the antispam should work with the IPS to block bad payloads prior to the inbox. In a like manner, the Web access policy should consult with the antispam component to disable a harmful URL inserted in a message.

"In a true UTM device, all the functions work together as a whole, such that the final result is stronger than the sum of the parts."

Future tech. UTMs will likely add more new technologies that have traditionally been sold separately, Stella says, citing data loss prevention and vulnerability scanning as two examples. "More and more companies are demanding to see them integrated with the gateway protection," he says. □

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Barracuda NG Firewall



Description

The NG Firewall series of unified threat management devices from Barracuda Networks is composed of 11 hardware appliances for applications ranging from large facilities to small branch offices, plus a virtual appliance for VMware. The latter can be deployed in the cloud and in a hybrid mode.

- Supplies antispam, antivirus, Web filtering, Layer 7 application profiling, intrusion prevention, and network access control
- The Barracuda NG Control Center interface provides management of security, content, and traffic policies
- Firmware release 5.0 brings support for 64-bit multiprocessing and Active Recovery technology

Best For: Enterprises, midmarket organizations, and service providers.

Check Point UTM-1



The Check Point UTM-1 family of turnkey, comprehensive security appliances has several models covering the security needs of organizations ranging from about 75 users in size to up to 1,500 employees. There's zero-hour outbreak protection on board in addition to DoS and buffer overflow attack mitigation; instant messaging and P2P firewalling; and antispam via reputation, white/blacklists, and content analysis.

- Firewall throughput ranges from 1.5Gbps in the UTM-1 136 to 4.5Gbps in the UTM-1 3076
- Features IPS, firewall, antivirus, antispyware, URL filtering, Web security, and antispam functionality
- VPN throughput of up to 1.1Gbps in the UTM-1 3076
- Modular Software Blade architecture allows future addition of features such as SSL or IPsec VPN, VoIP, and more
- Support for up to 1.1 million concurrent sessions in the UTM-1 1076, 2076, and 3076
- IPS throughput of up to 4Gbps in the UTM-1 3076

Best For: Medium-sized to large enterprises.

Check Point UTM-1 Edge N



The Edge N series has a very different focus than other members of Check Point's UTM-1 lineup. It's directed at SMBs and branch offices with pricing to match. Four models, including two ADSL editions, share the same performance specifications but differ in options such as Wi-Fi 802.11n, 3G modem support, Gigabit Ethernet, SFP and USB support, a print server, and more.

- 1Gbps firewall throughput
- 200Mbps VPN throughput
- 60,000 concurrent firewall connections

Best For: Branch offices and small to medium-sized businesses.

Product

Network Box M-255, M-285 & M-385



Description

Network Box offers a range of UTM devices, with three aimed at medium-sized enterprises. New from Network Box is the M-385, which makes use of a 3GHz dual-core Intel Core 2 Duo processor to power its impressive security technologies. The M-285 (pictured) features a 2GHz Intel Pentium M processor. There's stateful packet inspection and packet filtering in the firewall, IDS and IDP, anti-malware, antispam/phishing, content filtering, IPsec and SSL VPN, and more.

- Supports up to 150 users
- The M-385 has seven Gigabit Ethernet ports (expandable to 11 and with fiber support); the M-285 has four Gigabit Ethernet ports and a 100Mbps port

Best For: Medium-sized enterprises.

SonicWALL NSA 2400



SonicWALL says that its NSA 2400 gives small to mid-sized businesses comprehensive internal and external protection with easy, flexible setup. It boasts six Gigabit Ethernet ports plus dual USB connections for potential 3G wireless modem configuration access. The NSA 2400 is a next-generation firewall platform, the company says, bringing dual-core performance to the table along with advanced protection technologies.

- Application Intelligence and Control addresses leakage of sensitive data
- Granular control over basic policies and rules
- Reassembly-Free Deep Packet Inspection uncovers hidden threats
- Gateway antivirus, antispyware, and intrusion prevention

Best For: Branch offices and small to medium-sized businesses.

SonicWALL NSA 4500



SonicWALL bills its NSA 4500 as a next-generation firewall platform for central-site and large distributed environments needing high capacity and performance. The NSA 4500 includes dual-core processing, IPS, SSL VPN, high-availability technology, advanced networking, and proprietary features in an effort to provide real-time protection without sacrificing speed. SonicWALL says that the NSA 4500 supports a large but flexible deployment with 1,500 site-to-site VPN tunnels, 500 global VPN clients (3,000 maximum), two SSL VPN NetExtender clients (30 maximum), and two Virtual Assist Technicians (10 maximum).

- Reassembly-Free Deep Packet Inspection firewall
- SonicWALL Clean VPN secures tunnel access and traffic
- Application Intelligence and Control prevents data leakage

Best For: Midsized businesses; central-site and large distributed environments.

Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

Compiled by Marty Sems

Crossbeam Systems X-Series



The X-Series Network Security Platform family from Crossbeam brings together a quartet of security appliances for a range of needs. The X20, X30, X60, and X80-S are based upon a blade-style, modular architecture—what Crossbeam calls an open, adaptable platform—for expandability. Each encloses at least one APM (application processor module), an NPM (network processor module), and a CPM (control processor module), along with Crossbeam's latest XOS operating system.

- Models support throughput of 5Gbps in the X20 to 150Gbps in the X80-S
- APM blades are available with up to 12 cores
- The updated XOS operating system version 9.5 supports more security applications

Best For: Service providers, telcos, and large enterprises.

Fortinet FortiGate-3040B



High-bandwidth networks require high-bandwidth security. The FortiGate-3040B from Fortinet is up to the challenge. Sporting the highest 10Gb port density in its class, according to Fortinet, the FortiGate-3040B provides subscription-based, real-time security coverage. And with its purpose-built FortiASIC processors, it doesn't bog down the network.

- Hardware-accelerated 10Gbps Ethernet SFP+ and 1Gbps SFP ports
- 40Gbps firewall and 16Gbps IPsec VPN throughput
- Can support up to 4 million concurrent sessions and 100,000 new sessions per second
- 1.2Gbps antivirus and 5Gbps IPS throughput
- Redundant, hot-swappable power supplies

Best For: Large enterprises.

Juniper SRX Series Services Gateways For The Branch



Juniper says its SRX Series Services Gateways For The Branch UTMs are the only solutions that consolidate switching, routing, and security services in a single device to connect, secure, and manage any network. With five models for branch offices (and another five for the data center), the SRX series aims to deliver proven security services combined with superior availability and performance, while reducing total cost of ownership.

- Firewall, VPN, IPS, antivirus, antispam, Web filtering, and content filtering
- Wizards for quick and easy deployment
- AppSecure application-level monitoring and firewall
- Integrated and centralized reporting, configuration, policy management
- Integrated WAN/routing/QoS with Ethernet, 3G, LTE, T1/E1, xDSL, serial, and DOCSIS-3 options

Best For: Branch offices and small to medium-sized businesses.

Trustwave Unified Threat Management



Trustwave says that its Unified Threat Management delivers a combination of critical security technologies in a single, cost-effective package. With two tiered models to fit a variety of perimeter security needs, Trustwave UTM is available as an appliance or as a fully managed service. Fully configured with antivirus, VPN, intrusion prevention, and a firewall, the appliances can furnish a total throughput of between 4Mbps (TS-10) and 124Mbps (TS-100).

- Stateful firewall
- Inline IPS
- Web and email gateway antivirus
- Web content filtering
- Site-to-site and remote user VPN
- Remote application access control

Best For: Small, medium-sized, and distributed enterprises.

WatchGuard XTM 5 Series



A suite of management tools and enough speed to handle high-speed LAN backbone infrastructures and 1Gbps WAN connections mark the WatchGuard XTM 5 series of UTMs for midrange enterprises and SMBs. IT management access is provided by a centralized console, a CLI with script support, and a browser interface. The scalable XTM 5 series also comes with enhanced reporting skills and real-time monitoring provisions.

- Throughput up to 2.3Gbps firewall, 800Mbps XTM, and 750Mbps VPN in the XTM 530
- Up to 350,000 concurrent connections in the XTM 530
- 2,500 local user database
- Up to 600 branch office and 1,000 mobile VPN tunnels in the XTM 530
- Seven interface ports (six GbE and one FE)

Best For: Small to medium-sized businesses.

WatchGuard XTM 8 Series



The WatchGuard XTM 8 family of three UTM devices addresses the myriad security needs of main offices, headquarters, and other major facilities. The XTM 8 products supply full HTTPS inspection, IPS, antispam, and antivirus, plus optional features such as URL filtering, app control, reputation-enabled defense, and more. Administrators have access to the XTM 8 via scriptable command line, Web console, and WatchGuard System Manager. The system also provides rich reporting, real-time monitoring, clustering, and high availability (active/active and active/passive) features.

- Throughput up to 5Gbps firewall, 1.6Gbps XTM, and 1.7Gbps VPN in the XTM 830
- Up to 1 million concurrent connections in the XTM 830
- Up to 6,000 branch office VPN tunnels in the XTM 830
- 10 1Gbps Ethernet interface ports (four fiber ports optional)

Best For: Main offices/headquarters, medium-sized to large enterprises, and data centers.

Data Center Server Trends

Today & Tomorrow: Consolidation, Virtualization & The Cloud

by Chris A. MacKinnon

• • •

EVER SINCE BLADE SERVERS were cutting-edge in the server industry, things haven't changed much for the most part. But that's not to say that manufacturers aren't working to beef up their offerings and add new features, technologies, and options. And they're doing so mainly because the trend has been toward consolidation and virtualization. When you throw in multicore and multithreading processors, modular form factors, cloud computing, and a demand for higher density, you still have a cutting-edge industry.

Industry Update

John Fruehe, director of product marketing for server, Embedded, and FireStream products at AMD (www.amd.com), says manufacturers are changing with the times. He comments, "We are seeing a wider range of platforms that are targeted at cloud deployments. At the same time, modular form factors are addressing computing from a thermal perspective instead of just looking at raw performance and the same old 'vanilla' form factors. And performance is still very important, but it's only one piece of the puzzle." Fruehe says customers are

demanding a balanced platform, and OEMs are answering the call to action by providing a wide range of options.

In the realm of x86/x64 servers, John Sloan, lead analyst with Info-Tech Research Group, says a major boost in capacity by chip manufacturers is a "tide that raises all boats." He explains, "We've seen all the major vendors coming out with new server series to take advantage of this new power. In virtualization, for example, the number and size of virtual machines that can be hosted took a quantum leap forward. Our advice to anyone who considered virtualization two years ago and concluded that virtual servers just didn't have the horsepower for their needs is to look again." In a recent Info-Tech Research Group survey, x86 and x64 Windows or Linux servers chewed up close to 89% of server acquisition over the past year.

According to Don Clegg, vice president of marketing and business development at Supermicro (www.supermicro.com), as the data center industry evolves, new metrics for measuring servers are gaining increased importance. "For instance, rather than just looking at raw processing power or total core count—both of which are still important—data center managers are tuning their server farms for processing power per cubic foot and processing

power per watt and processing power per dollar. It's a constant race to design new generations of platforms that deliver incremental performance benefits, often at a reduced overall total cost of ownership," Clegg says.

Newest Trends

The most important trends, according to Andrew Feldman, CEO at SeaMicro (www.seamicro.com), are around the rise of the Internet workload and the recognition that one server size does not fit all needs. "The fastest growing workloads . . . are not CAD/CAM workloads, and they don't need massive single-thread performance. Instead, they are Internet workloads, borne of companies with business models dependent on giving customers free compute. This necessitates software that ensures each user consumes only a tiny bit of compute and memory, so that thousands of users can simultaneously use a server," Feldman says. In this environment, smaller and simpler CPUs are radically more power-efficient.

Info-Tech's Sloan sees consolidation is a big trend. He says a consolidated infrastructure is more than just aggregated servers. It is also about storage consolidation, network consolidation, and a management stack that can orchestrate all these into one big virtual mainframe that gets partitioned up.

According to AMD's Fruehe, cloud computing and virtualization continue to be the two biggest trends impacting the data center. He comments, "We are seeing increasing core density, with customers moving to higher core counts with every new generation server purchase. Fruehe says as virtualization continues to permeate the market, core count will continue to be an important consideration.

Increased power efficiency is vital in most data centers, says Clegg—even those with unconstrained electrical capacity. He says cooling costs often approach the same level of costs required to power servers. Clegg notes, "Historically, operational expenses and capital acquisition expenses were typically handled by separate organizations within a company, so power efficiency was frequently an afterthought. However, today more and more data centers are focused on total cost of ownership vs. low acquisition cost when making architecture decisions." Clegg says another key trend involves driving down service costs while increasing uptime.

The Road Ahead

In Sloan's opinion, the direction we are headed in is all about the cloud. He says most enterprise cloud strategies aim

Key Points

- Cloud computing and virtualization continue to be the two biggest trends impacting the data center. Core density is increasing, and customers are moving to higher core counts with every new generation server purchase.
- Server vendors are not just selling servers, they're selling consolidated infrastructure (storage consolidation, network consolidation, and a management stack that can orchestrate all these into one big virtual mainframe).
- Server manufacturers are changing with the times. A wider range of platforms are now targeting cloud deployments, and modular form factors are addressing computing from a thermal perspective instead of looking at raw performance.

to continue to develop the internal cloud (with consolidation and virtualization to create an agile resource pool) and then longer term to look to the external cloud for certain workloads and for hybrid options where workloads can move from internal to external clouds. He says, "In the example of 'cloud bursting' (where an application runs out of capacity on the internal cloud), additional capacity (virtual servers) can seamlessly be brought online in an external cloud to accommodate the additional processing. Look for server vendors to develop more cloud-like automation for the internal server infrastructure as well as debut their own external cloud capacity for those hybrid scenarios."

According to Feldman, the server market has not been this exciting in 20 years. "We have new architectures that use smaller, simpler CPUs. These architectures threaten the status quo by demanding that server companies engage in meaningful technological innovation in order to compete," he says.

But Feldman says we also have a real threat to the x86 hegemony on the horizon. He comments, "ARM has come to dominate the client side, with nearly perfect market share in phones and tablets. The question is: Will they be able to convince software engineers that the savings in power and cost from working with an ARM-based server architecture outweigh the cost to change away from x86?" This will be one of the most exciting technology battles in recent memory, says Feldman. "Today Intel is king, and you can be very sure they will fight tooth and nail to maintain their dominance." ■

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What To Expect

In the coming months, we can expect more cores, more power efficiency, and more scalability, according to John Fruehe, director of product marketing for server, Embedded, and FireStream products at AMD (www.amd.com). He comments, "As devices like tablets, small form-factor PCs, thin clients, and smartphones start accessing cloud applications, computing power will be provided by the servers powering the cloud. In the commercial space, SaaS is offloading the real CPU work from the end-user device and shifting it back to the data center. Scalability becomes a key component as the demand on data centers constantly shifts depending on customer and end-user demand."

SIX QUICK TIPS

How To Succeed In Outsourcing

Establish Goals, Pay Attention To Contracts & Maintain A Good Relationship With Your Provider

by Cynthia Harvey

WHEN THE PRESSURE IS ON to reduce costs, many organizations decide to outsource some IT functions. While many enterprises are happy with these relationships, others report difficulties. In a 2011 survey of 500 IT professionals conducted by Lieberman Software, 62% of respondents said that their outsourcing agreements ended up costing more than they had anticipated. Even more disturbing, 77% of those surveyed said they thought their outsourcers had made up work in order to make more money.

Experts say that a careful, thoughtful approach to each stage of the outsourcing process can help make IT outsourcing arrangements successful for both parties.

Keep Your Goals In View

Near the beginning of the IT outsourcing process, you should explicitly state your goals for the project. "First, companies should look to themselves and ask, 'Why do I want a partner?'" says Ian Watt, director of application development and maintenance transitions for sourcing advisory firm TPI. "That done, selecting a partner becomes a much easier task, because the desired outcome is well known."

As they determine their selection criteria and negotiate the terms of their contracts, enterprises need to make sure that all of their decisions support those goals, warns David Brown, a principal in KPMG's Shared Services and Outsourcing Advisory Group. "Too many times, a buyer will go into a selection process with one set of objectives and by the end of the process has selected an outsourcing partner that does not fit the original intent," he says.

Structure The Contract Carefully

After you've selected the firm you will use, Brown says that having the right language in your outsourcing contract can help protect you from unexpectedly high costs. For example, he recommends variable pricing terms. "Companies need to account for variability in changes in their environment. This can include volume increases, environment changes, regulatory changes, or scope of services change," he says. "One of the easiest ways to protect yourself is to establish a variable component in your pricing structure that

allows you to adjust pricing within controls and predictable limits."

Brown says that a good contract will also include detailed supporting documents, such as statements of work that spell out the services the supplier will perform. "These documents should be structured at the right level of detail and managed throughout the contract life to help ensure both parties are aligned," Brown says. "In many cases, this is where scope creep occurs, as buyers and suppliers have disagreement on what was in the original contract, which can cause a rise in contract pricing."

Establish Good Contract Management Practices

After the contract is signed, you need to pay constant attention to the ongoing work and make sure the supplier is meeting the terms of the agreement. "When an outsourcing agreement is signed, transition is completed, and steady state operation begins, service management and governance must begin, as well," Watt says. "If it does not, unexpected costs and quality slippage will occur." He notes that service management and governance have four major components—performance management, financial management, contract management, and relationship management. Companies must pay attention to all four in order to prevent problems.

Brown also recommends that you manage to the terms of the contract, even in cases where you've developed a close working relationship with your outsourcing vendor. "Many buyers tend to delay the establishment of good contract governance and rely on relationships," he says. "Set your governance processes up at the beginning of the engagement and enforce the contract rules as defined in the contract language."

Treat Your Outsourcers Like Employees

Some enterprises approach their IT outsourcers as they would any other supplier. However, experts say that the most successful partnerships occur when buyers treat their outsourcers more like employees.

That mindset should be present as you go through the selection process, says Ben Trowbridge, CEO of outsourcing consulting firm Alsbridge. "Try to break down the sales process to where you can actually talk with them and spend time with them," he says.

BONUS TIPS

Keep senior roles in-house. Experts say that certain high-level roles should never be outsourced. "Nobody but the company can finally decide which markets to enter or leave, which products or services to focus on, or where capital is best invested. These things should not be outsourced," says Ian Watt, director of application development and maintenance transitions at TPI.

David Brown, a principal at KPMG, also recommends strategic functions stay in-house. "IT strategist and senior business analysts are roles that typically remain within a company's retained organization," he says. "These roles tend to be highly skilled and require a deep knowledge of the industry as well as the company itself."

Consider buying benchmarks. Many outsourcing consultants usually serve

midsized to large enterprises, but many offer some resources for smaller firms, as well. "For small enterprises, it's often hard to justify [the cost of] hiring an advisor," notes Ben Trowbridge, CEO of Alsbridge. "But I do think they can afford benchmarks, and I would strongly encourage them to get IT benchmarks as a part of outsourcing so that they can see how their costs match up in the market."

Best Beginning Tip:

Evaluate How Your Business Needs To Change

In the very beginning of the process, when your company is first considering outsourcing a particular process or function, think about what you will have to do differently once a contract is in place. "Evaluate completely how your organization needs to change, because your business needs to, in fact, change what you do on your side of the fence," advises Ben Trowbridge, CEO of outsourcing consulting firm Alsbridge. "It's rare that it's a complete process that's being outsourced. It's more often than not a portion of a process, and if you're not careful, you can create a lot of redundant costs on your end."

Most Practical Tip:

Start Small

If your company has never outsourced an IT function before, David Brown, a principal at KPMG, recommends that you "start small with functions that are mature in delivery and can provide immediate and high ROI." He notes, "Functions like help desk or service desk are a good first step into the outsourcing market, and many providers have the ability to offer the services to companies at all levels."

AMERICAN PORTWELL CAR-4010

by Kris Glaser Brambila

Modular Rackmount Servers Customized Your Way

AMERICAN PORTWELL'S CAR-4010 is a modular 1U rackmount communication appliance designed for network security applications, including firewall, VPN, IDS/IPS, and UTM, and for network management applications such as routers, gateways, and QoS.

The CAR-4010 features a modular design that can help companies maximize cost savings, says Mark Huang, senior product marketing manager at American Portwell. "We wanted to include as many options as we could in this product," he says. Customers can select the components that are best suited for their business. For example, the CAR-4010 includes a 3.4GHz Intel Xeon E3-1275 processor, a 3.1GHz E3-1225 processor, or a 3.3GHz Intel Core i3-2120 processor. Users can install up to 16GB of dual-channel DDR3 1333/1066 memory and up to two 3.5- or 2.5-inch SATA HDDs or SSDs.

For expandability, the CAR-4010 has eight GbE RJ45 ports or four GbE SFP + 4GbE RJ45 ports; two USB 2.0 connections in the front of the chassis; a single



American Portwell CAR-4010

A modular, 1U rackmount communication appliance designed for network security and network management applications.

PCI-E x8 port for proprietary interfacing; and one PCI-E x16 port for standard interfacing and use with Portwell's ABN and NIP network interface cards. Customers can also choose between a 250W 80 Plus full-range ATX power supply; a 275W redundant power supply; or a 250W DC48V input.

Regarding the CAR-4010's modular design, Huang says "...our customers have at least three choices for system placement: the basic configuration; a daughtercard connected via built-in PCI-E x8 Golden Finger; or their own third-party card."

Spam & Phishing: The War Rages On, Symantec Says

Symantec released its May 2011 "State of Spam & Phishing" report, and it's a bit of a mixed bag. On one hand, the average daily spam volume fell 5.35% in April, year-over-year spam volumes were down an impressive 65.42%, and the percentage of all messages that are spam fell from 89.22% last year to 74.81% this year.

"There have been numerous events in the last year that contributed to a decline in spam volumes," says Eric Park, abuse desk analyst at Symantec. "The Spamat.com network shut itself down, and a few major botnet networks, including Rustock, were taken down, as well. When the overall spam volume goes down, spam percentages also decline."

Compared to the 2008 McColo shutdown, which had little lasting effect on spam volumes, Park says that Symantec accurately anticipated a slower spam recovery following the more recent shutdowns. "With major actions by authorities, spammers are operating in a more difficult environment than ever," Park says. "We don't expect to see a significant bounce up soon, but we also believe that the rate of decline we've had over the last 12 months will continue for the next 12 months."

Spam Down, Phishing Up

The bad news is, phishing-based attacks increased by 15.61% between April and May. Cybercriminals are relying more on automated toolkits and unique domains to launch their attacks. Symantec also reported a spike in phishing emails that dealt with the death of Osama bin Laden.

"One type of attack that is definitely on the rise is more targeted sophisticated attacks," Park says. He asserts that spam and viruses appear to be following a similar arc, with early attacks largely perpetrated to spread as far as possible to gain the authoring cybercriminal notoriety.

Later attacks have become more sophisticated, target smaller groups, and deliver a more damaging payload. "This is especially true for phishing," Park says. Instead of sending millions of phishing messages to large groups, spoofing nationwide financial institutions, Symantec is seeing phishing messages that spoof the headers of local financial institutions, sent to people living relatively nearby, which greatly increases the chances of users falling prey to the attack.

Symantec's "State of Spam & Phishing" report has a lengthy list of dos and don'ts for thwarting spammers, which include unsubscribing from unwanted mailings, being picky about which Web sites you sign up for, and never opening or replying to spam messages.

by Andrew Leibman



Better Plan For Future Data Center Needs

The Key Is Knowing What Lies Ahead

by Elizabeth Millard

• • •

KNOWING THE FUTURE WOULD be a neat trick for any data center manager, but unfortunately, crystal balls and fortune-tellers tend to be vague on details such as network planning, staffing, and design considerations. However, there are certainly ways to make better predictions when it comes to planning for future data center needs. Here are some strategies that can help.

Foster More Standardization

When you standardize processes and procedures, future needs become more predictable. Although unexpected issues always seem to crop up to some degree, standards can help to minimize unpredictability.

Key Points

- Develop greater standardization in processes and procedures, because this can reduce the amount of unpredictability in future data center needs.
- Involve other departments in planning and regularly ask about business needs in order to make sure IT is aligned with larger business goals.
- Develop a plan for security incidents and how they'll be handled. Although security issues will crop up unexpectedly, having a procedure in place will help minimize damage.

To develop standards, IT managers can note how a certain process or procedure is being implemented currently and then establish goals as to how that strategy could be made more efficient, advises Kris Domich, principal consultant at Dimension Data (www.dimensiondata.com). Most likely, an enterprise will need to develop a centrally managed process with regular reporting and auditing capabilities.

For example, an enterprise can build standardization around equipment maintenance, upgrade schedules, agreements with vendors, and potential swap-out timeframes. Those schedules can be synced with facilities maintenance so that the IT department isn't trying to do server overhauls on the same day that the fire alarms are tested or renovation work is started.

By increasing standardization, data center managers can plan better, by working around schedules and upgrades instead of trying to adjust in a more reactive manner.

Involve Other Departments

Knowing the needs of company departments and the goals of senior-level executives helps to plan for data center needs in a way that focuses on business goals, not just IT directives.

Senior-level input can be helpful for boosting buy-in for new IT initiatives, as well, notes Jeff Roth, director of technology risk advisory services at RSM McGladrey (www.mcgladrey.com) and member of the IT GRC task force for

ISACA (www.isaca.org), a nonprofit association focused on developing knowledge and practices for information systems.

He states that establishing cross-functional teams can also be useful for data center planning, because different perspectives can be helpful for all the aspects of planning required, such as analysis, process definition, measurement, and goal setting. "A common misstep is failing to use cross-functional teams," he says. "This mistake will lead to missing key process steps, owners, customers, and architectural requirements."

Examine Staffing Needs

To better plan for data center requirements, carefully examine staff roles and responsibilities. There are many factors that go into staffing strategies, but in general, the areas to look at will be expansion plans, efficiency, budgets, and utilization. The overall goal should be to structure the department in a way that minimizes issues for users, notes Nick Vossburg, president of Alteritech (www.alteritech.com). Sometimes that goal might involve keeping a manager for day-to-day management of technology and strategic vision, but outsourcing all other tasks, he states.

Any type of staff restructuring plan should look ahead about three to five years to determine what skills will be necessary and whether current staff members can tackle the training required, says Hector Hernandez, general manager for colocation services at Terremark Worldwide (www.terremark.com).

He adds that outsourcing functions or contracted maintenance agreements allows an IT department to keep staffing at a minimum and lets managers and staff concentrate on customer support. Also, automating functions can be helpful for troubleshooting, and it's always a good idea to implement cross-training so staff members can perform tasks in several different areas.

"In the past, a lot of support organizations did not perform so many functions, or specialized in either servers or network-related equipment," says Hernandez. "Today, a well and diversely trained staff can handle several different technologies and manufactures of equipment. Using resources across an organization, despite geographical location, is another effective way to keep utilization rates high and staffing low."

Implementing more diverse, broader skillsets can also help IT managers plan for data center needs more efficiently. For example, having an in-house staff member who is familiar with cabling such as fiber, low-voltage copper, and other options can be useful when the time comes to plan for data center space upgrades. That staff member can help tweak design strategies using multiple perspectives, reducing the amount of consultant time needed.

Expect The Unexpected With Security

One of the largest challenges to any data center plan is unexpected security issues. In order to plan better, an IT manager should factor in some time to deal

with any security problems that might crop up. Although it's nearly impossible to anticipate security trouble, it's possible to put procedures in place to deal with unexpected events.

Put a plan in place that includes security training, incident response processes, user and customer notification, and patch and upgrade processes. Generally, increasing communication can help, as well, notes Virginia Kirby, vice president of global infrastructure outsourcing at Capgemini (www.capgemini.com). She says, "Awareness of potential security vulnerabilities, as well as compliance changes, need to be communicated not only to technical teams but to management and clients on a regular basis."

That type of awareness extends to security trends. For example, developing greater awareness of the types of issues that can take down mobile devices, affect cloud computing strategies, and disturb virtualization strategies can be helpful in preventing problems in the future.

Roth adds: "Operational activities also need to provide for adequate control over process variance and, hence, errors and other quality of service degradation. Both the security plans and operational procedures must be standardized to reduce key control variances that lead to security vulnerabilities and operational failures."

With security and every other aspect of data center management, predicting the future isn't an easy feat, but it's not impossible. Knowing the potential challenges, putting standardization in place, and staying aware of an SME's data center trends can go a long way toward better planning for the future. □

TOP TIPS

- Explore training opportunities for staff and managers, especially in technology areas that change frequently, such as wireless and security.
- Review maintenance schedules for all components of the data center, including HVAC systems, servers, fire systems, and other equipment and facilities areas. Understanding maintenance updates will help in planning for new data center design or system upgrades.
- Document processes in a step-by-step manner, so that there's greater understanding of how different data center components, staff time, and strategic planning decisions fit together. Recognition of past trends is always helpful for mapping the future.
- Take a look at data center space utilization and plan a date for expansion now rather than later. Getting a jump on issues such as site selection, contractor choice, and managed service plans can be helpful for making expansion plans more efficient.



Get The Most From Your Cloud Investments: Done Properly, Moving To The Cloud Can Pay Dividends

BY CYNTHIA HARVEY

VENDORS THAT OFFER PUBLIC CLOUD COMPUTING services often make big claims about how much enterprises can save. Boasts of 50%, 70%, or even 90% cost reductions are common. In reality, although some companies report that they achieve the cost reductions they had anticipated, others say they saved less than expected—or not at all.

What can you do to ensure that your cloud investment results in the maximum benefit for your company? That depends on where you are in the cloud adoption process.

Considering The Cloud? Compare TCO

If your company is still in the process of considering whether the public cloud is right for you, experts say you should evaluate total cost of ownership. "Companies that haven't yet moved to the cloud should measure the total cost of ownership of their

current IT operations and compare that to the immediate cost savings and additional flexibility which can be gained by shifting all or part of their operations to one or more cloud services to gain a rapid ROI," recommends Jeffrey M. Kaplan, managing director of consulting firm THINKstrategies.

How can you figure out the total cost of ownership for cloud services? Several companies have published cloud calculators that can help you figure out these expenses. Unfortunately, some of these tools serve

more as marketing gimmicks than as actual cost comparison tools, so for more accurate assistance, you may want to enlist the help of a cloud computing consultant with experience in determining the actual cost benefits of cloud deployments.

Remember that you don't have to move everything to the cloud. Some applications may be more cost-effective in the cloud while traditional deployment might make more sense for others.

Beginning A Cloud Project? Consider Your Needs

If your company has decided to head to the cloud, you'll need to decide whether SaaS (software as a service), IaaS (infrastructure as a service) or PaaS (platform as a service) will be best for the application(s) you plan to migrate. "Evaluate what type of cloud computing offering is appropriate for your need," says Bernard Golden, CEO of HyperStratus (www.hyperstratus.com) and author of the book "Virtualization for Dummies." He advises, "For non-differentiating applications, seek out SaaS before considering managing the application yourself in an IaaS environment."

Both IaaS and PaaS offerings will require IT staffers who understand the unique requirements of the platform you've chosen. That could increase salary, training, and management costs instead of decreasing them. On the other hand, IaaS or PaaS may be appropriate for custom applications.

Experienced In The Cloud? Look For New Opportunities

If your company has already experienced some success with cloud computing,

you may be able to leverage your current investments. "Companies which are already gaining cost savings from cloud services should build on this initial success by identifying ways they can utilize cloud services to create new solutions for their customers or transform their business processes," Kaplan says.

For example, if your company is already utilizing IaaS or PaaS solutions, you may be able to move additional applications onto the same services. Because your staff already has experience with those services, you'll minimize training and related expenses. In addition, if a portion of your employees already use a particular SaaS product, moving other staffers to the same service may qualify you for volume discounts. □

Top Tip: Take The Long-Term View

Cloud computing offers both long-term benefits and long-term costs. Bernard Golden, CEO of HyperStratus (www.hyperstratus.com), says that enterprises need to "recognize the long-term requirements of selecting a particular cloud approach." For example, he points out that IaaS (infrastructure as a service) has an "impact on application lifecycle, operations, and employee skill set upgrades." You should also consider how a cloud service will affect your business processes, productivity, and efficiency in the years to come.

FEATURED PRODUCT

Compact & Customizable

Chenbro's RM137 Storage Chassis Makes Installation & Customization Easy

by Josh Compton

AS A MANUFACTURER of rackmount chassis, Chenbro understands the importance of maximizing the available space and being able to adjust a chassis to fit your specific needs. Chenbro's RM137 storage chassis is both compact and customizable so you can get the maximum amount of storage without taking up too much room.

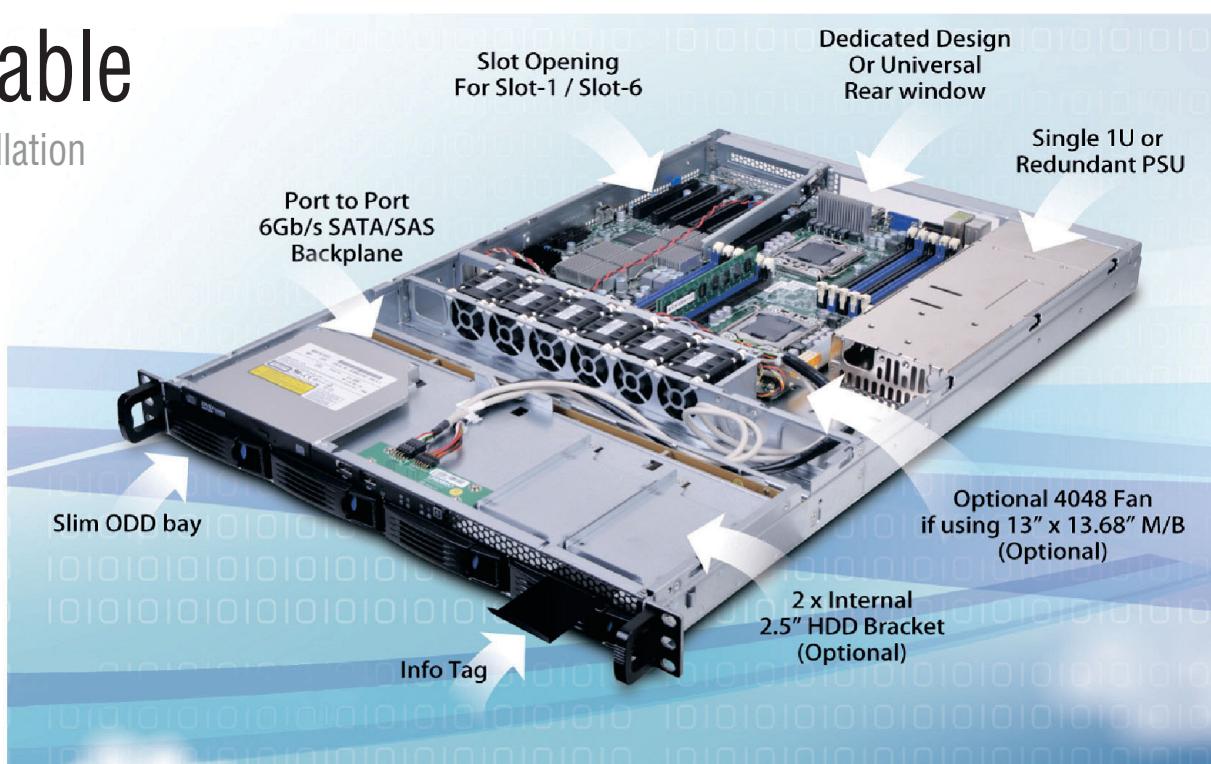
The Features

The RM137 is designed specifically to meet data centers' physical and cloud computing storage needs while also making it easier for system engineers to design and deploy their storage solutions. The unit takes the place of three of Chenbro's

current models, the RM11704, RM11602, and RM13204. The RM137 is a standard 1U chassis measuring 1.7 x 16.9 x 26 inches (HxWxD). It can hold up to four 3.5-inch hard drives and has optional bays for a slim optical disk drive. There is also room to fit two 2.5-inch internal OS drives with a bracket accessory.

The RM137 supports a 1U single-phase power supply or a 1+1 redundant PSU, if you purchase an additional kit. The backplane supports 6Gbps SATA in a 2-port or 4-port configuration. Additionally, the RM137 is designed to hold up to 12 x 13-inch EEB motherboards, but can also work with 13.68- x 13-inch motherboards. It supports Intel or AMD DP quad-core processors.

On the front panel, there is an on/off power switch, a system reset, a power LED, an HDD activity LED, and two LAN activity LEDs, as well as two USB 2.0 ports. The RM137 supports either a



Slot-1 or Slot-6 card retainer, as well. For cooling, it has four 4048mm PWM fans built-in and there is room to add two more. Each of the included fans is built with anti-vibration technology to reduce vibration impact to the hard disk drives.

Chenbro also offers the RM147 model, which has many of the same features as the RM137 but with a few notable differences. The RM147 measures 1.7 x 16.9 x 20 inches (HxWxD) and can hold up to six 4028mm fans. It supports standard ATX motherboards as well as a 1U single PSU.

The Benefits

One of the biggest advantages to using the RM137 is customization. For example, users can set up the RM137 as a 4-bay configuration with four 3.5-inch hard disk drives, or they can change it to a 2-bay configuration with two 3.5-inch hard disk drives by switching the 4-port backplane to 2-port and converting the other two drive trays into dummy trays. Even the cooling system for the RM137 is customizable: It includes four fans but can support up to six, and the fan bays, though not hot-swappable, make it easy to change fan configurations to better match your cooling needs. □

CHENBRO RM137

(866) 364-8264
www.chenbro.com

The RM137 is a 1U storage chassis that takes up less space and can be easily customized to fit your needs.

CHENBRO

Data Center/IT Training

Training Center

Global Knowledge



Global Knowledge

Description

Global Knowledge is the worldwide leader in IT and business skills training. The company delivers courses via training centers, private facilities, and the Internet, letting customers choose when, where, and how they want to receive training programs and learning services. Global Knowledge specializes in high-quality, hands-on data center training courses that are delivered by accomplished cross-domain experts. Instructors are certified Cisco Systems and VMware Certified instructors with real-world experience. The company's broad-based data center curriculum includes VMware, Cisco, Sun, IBM, Red Hat, and Microsoft courses as well as other subjects.

- Learn from experienced instructors and award-winning curriculum
- Engage with custom hands-on labs and exercises
- Choose from robust delivery options
- Train a local group or a dispersed workforce
- Select from more than 1,200 courses

Best For: IT training for the individual or for the enterprise organization that requires skills development or certification.

NetCom Information Technology



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NetCom Information Technology, headquartered in New York, has training centers located in 18 states across the country and offers training solutions for more than 1,000 technical, application, and project management courses to Fortune 500 companies, businesses, government agencies, and individuals. NetCom's subject matter experts provide authorized hands-on education in the latest technologies from leading vendors, including (ISC)2, Adobe, Autodesk, Check Point, Cisco, Citrix, CIW, CompTIA, EC-Council, Microsoft, Novell, Oracle, PMI, and others. NetCom is an authorized testing center for Sylvan Prometric, VUE, and Certiport. The company is also a New York and New Jersey Workforce Training Provider and a licensed school registered with the New York State Education Department.

- Provides world-class training and certification preparation for the most in-demand computer technologies
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- All courses and boot camps are hands-on, led by certified instructors using the latest equipment
- On average, NetCom instructors have 11 or more years of experience in the subjects they teach
- Curriculum options aimed at helping students become Web site developers, database administrators, computer programmers, graphic designers, security specialists, and project managers
- In the last decade, NetCom has delivered training to thousands of individuals and corporations

Best For: IT, security, and project management training for beginners and also for experienced staff looking to enhance their careers or enter a new market.

Training Center

TechSkills



Description

TechSkills is a nationally recognized leader in education delivery, specializing in skills and certification training for careers in information technology, healthcare services, and business. TechSkills' teaching methodology combines elements of traditional instructor-led education, the latest online learning tools, and extensive hands-on skill-building to create an effective and efficient learning process. Students control what they learn, when they learn, how they learn, and how rapidly they progress. Based in Austin, Texas, TechSkills operates more than 25 campuses in 16 states. TechSkills campuses are licensed in each state in which they operate, and select TechSkills campuses are nationally accredited by the Accrediting Council for Continuing Education & Training.

- Offers personalized programs that include morning, afternoon, evening, and weekend classes; online and on-campus study options; intensive small group "microlab" training sessions; and the latest online learning tools
- Course customization lets you skip what you already know and progress at your optimal speed
- Hundreds of hands-on lab activities to provide real-world experience
- Online access 24/7 lets you work through on-the-job scenarios in real time
- More than 90% of TechSkills' students pass their industry certification tests on their first attempt; if you don't pass your certification test the first time, TechSkills will pay for one retake for every successfully completed course
- Job placement assistance that includes personal coaching, help with résumés, and career development workshops
- Multiple programs, including Microsoft, Cisco, Oracle, and IT security certification

Best For: Students seeking certification in IT, technical, or business areas.

United Training



Actually a consortium of independently owned training centers, United Training concentrates on helping its members provide high-quality IT training from regional providers. Since 2000, the company has been delivering training nationally and developing strategic relationships with manufacturers and vendors of IT-related products and services. The company's goal is to provide quality training throughout North America on any IT training product, anywhere, and at any time. United Training offers in-class, private, and mobile classroom training options, and many members offer Web-based virtual classrooms. United Training regularly offers free Webcasts. In addition to the typical communication channels, members and students can comment on and communicate with the company via Twitter and Facebook.

- Microsoft Gold Certified Partner
- Courses offered in most states and in Canada
- Hundreds of courses offered in more than 50 technology areas, including Web development, programming, CRM, SQL Server, and Exchange
- Many courses offered for Cisco, MCSA/MCSE, and other certifications

Best For: IT staff seeking basic or advanced certification in multiple areas and employees needing introductory coursework in popular business applications.

Centers

New Horizons Computer Learning Centers



With more than 320 locations in 70 countries, New Horizons is the world's largest independent IT training company. For the past 29 years, the company has delivered a full range of IT training and certification and business skills education. The company has helped more than 25 million students and offers courses in hundreds of locations around the world.

- 320 New Horizons locations worldwide, specializing in Microsoft and Cisco products and technology
- Cisco's North American Learning Partner of the Year for 2009-2010
- Microsoft's largest worldwide training partner
- Flexible training: mentored learning, instructor-led classroom, and online
- The only provider with Mentored Learning capability that gives you all the benefits of an instructor while learning at your own pace
- More than 90 authorized Cisco locations in the United States
- Local centers, instructors, and customer service teams that tailor learning paths specifically to your business/career goals

Best For: New and experienced IT staff, including experienced Microsoft technical staff looking to cross over into Cisco routing, switching, and voice products, and those seeking additional ways to increase their marketability. Also ideal for help desk professionals looking to improve their skills and enhance their career options.

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Unitek Education



Unitek Education is the only IT training company in the world to have won Learning Partner of the Year awards from five different IT market leaders. Microsoft, Citrix, CompTIA, and Red Hat have all acknowledged the company's relentless drive for training excellence. Unitek is a learning partner for Microsoft, Citrix, Cisco, CompTIA, Red Hat, and NetApp and is the only company in the United States to have achieved the dual status of Microsoft Gold Partner for Learning Solutions and Cisco Learning Partner. The company provides multiple learning modalities, including the Smart classroom, which enables students to experience all the benefits of a live instructor-led class from the comfort of their homes or offices. Unitek's accelerated "boot camps" are aimed at teaching specific skills, tools, or technologies in a short period of time in a zero-distraction environment. Unitek is an authorized Prometric testing center, operating multiple exam sites in Fremont and Sacramento, Calif.

- Courses offered in multiple locations as well as online
- Onsite training available
- Courses offered for both end users and corporate administrators

Best For: IT staff seeking basic or advanced certification in any of several areas: Microsoft, Cisco, NetApp, Red Hat, Citrix, Linux, and others.

RAIDAGE gAGE104U40SL-SAUF

NEW PRODUCT

by Blaine Flamig

Flexible, High-Performance Storage For Demanding Applications

iSTARUSA BELIEVES that innovative technology leaders must possess the ability to incorporate the latest advances into all products to ensure customer satisfaction. Proof positive is the company's new 1U desktop-type gAGE104U40SL-SAUF storage appliance from its RaidAge division, which offers multi-interface support, discrete eSATA and single miniSAS connectors, and an onboard RAID controller, all in a single trayless enclosure.

Although suitable for numerous applications, the gAGE104U40SL-SAUF is designed to provide SOHO users with a high-end, high-capacity audio and video storage solution that supports up to four 3.5-inch 6Gbps SATA I/II drives, each providing up to 3TB storage. Touting up to 300MBps data transfer speeds, the gAGE104U40SL-SAUF features a streamlined construction that makes the enclosure ideal for mounting on short-depth racks in SOHOs and for general data storage uses. Additionally, the gAGE104U40SL-SAUF's aluminum case construction integrates a 140W PSU and three 40mm silent-operating fans that remove heat without creating a din that distracts users



RaidAge gAGE104U40SL-SAUF

The 1U-sized gAGE104U40SL-SAUF integrates an onboard hardware RAID controller, supports multiple interfaces, and can hold four 3.5-inch hot-swappable drives.

\$450

from their tasks. With an optional handle in place, the gAGE104U40SL-SAUF is also rackmount-convertible.

The gAGE104U40SL-SAUF supports USB 3.0, eSATA, FireWire 400, and FireWire 800 interfaces, and its onboard RAID controller supports RAID 0, 1, 3, 5, and 10. The appliance delivers plug-and-play compatibility with Mac and Windows configurations and doesn't require any tools or screws for installation.

Other attractive features of the RoHS-compliant enclosure include an easy-to-use Smooth HDD Release Mechanism Design and multifunction LED indicators built into the enclosure's front side to signify system and hard drive activity.



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WHO: Mobiles Might Cause Cancer

Mobile phones are now listed as possible carcinogens among such notorious agents as lead and chloroform, according to the World Health Organization and the International Agency for Research on Cancer. Despite the ruling, the WHO has yet to establish any adverse effects from cell phone use, largely because of a dearth of studies on the long-term effects of cellular radiation on humans. The new classification stops short of calling cell phone radiation a "probable cause" and outright carcinogenic, but it is a step beyond the IARC's "not classifiable," and "probably not carcinogenic" labels.



Researchers Make Memory Encryption Breakthrough

A new hardware-based encryption technology from researchers at North Carolina State University could let PCs, smartphones, and mobile devices secure data at a fraction of encryption's traditional performance penalty. Unlike the current memory standard DRAM, NVMM (non-volatile main memory) technology retains data even without power, letting devices that use it instantly power on. Prior to the breakthrough, NVMM was vulnerable to unauthorized access and could not be encrypted because encryption software needs to run within memory. According to the researchers, i-NVMM takes just a 3% performance hit during the encryption/decryption process. It uses an algorithm to auto-encrypt sensitive data only when it is idle and encrypts the rest during shutdown.

Two Found Guilty Of Selling Counterfeit Cisco Gear

Two employees of Hong Kong firm Han Tong Technology have been found guilty in a scheme to import and sell counterfeit Cisco-branded networking equipment in the United States, along with stealing intellectual property and defrauding customers. Chun-Yu Zhao and Donald Cone were charged with conspiracy. Zhao had additional charges, including import fraud and counterfeit labeling. Zhao cheated customers out of millions while operating through a United States company known as JDC Networking. The company used pirated software to alter Cisco products and falsify labels. Zhao and Cone face five years in prison and a \$250,000 fine. Zhao could face additional fines and prison time.

VMware Acquires Socialcast

VMware has agreed to purchase enterprise collaboration platform vendor Socialcast of San Francisco, Calif., under undisclosed terms. VMware has recently been among Socialcast's customers, which also include Avaya and Nokia. Socialcast will continue to be available as a VMware virtual appliance, a hosted service, and a private cloud implementation. Its personnel will continue to develop the platform; VMware plans to accelerate Socialcast's growth and has already committed significant resources to that end, the company says. Socialcast staff will continue to support the platform until operations can merge with VMware.

by William Van Winkle

THE ECONOMY MAY BE IMPROVING, but enterprises must remain vigilant against overspending. This is particularly true in data centers, where the pace of change and reliance on products and services with constantly changing price tags can lead to inadvertent waste. We spoke with leading industry analysts to identify today's biggest spending traps and how IT managers can avoid falling in.

Trust But Verify

Spending begins with expectations, and expectations are often heavily influenced by marketing and ROI calculators. According to Darin Stahl, lead analyst with Info-Tech Research Group, ROI calculations can be useful, but keep your source in mind. Even if the numbers are solid, vendors have a vested interest in presenting those numbers in a way that will elicit a desired spending effect. Vendors provide ROI numbers that put their solutions in the best possible light in relatively broad scenarios. "The best thing that a small/medium enterprise can do is 'trust but verify,'" says Stahl.

Key Points

- Don't strive for IT investment returns in the overly near term. Sometimes taking a longer view will reveal the best overall cost savings.
- Beware best-of-breed point products, as these may be harder to scale within broader solutions. Integrated technologies may cost more up front but could prove less expensive in the long term.
- Spending money in fighting the decentralization of IT along the vectors of cloud services and consumerization is an uphill battle. Money will be more advantageously spent on ways to bridge these trends to existing IT operations.

Part of this verification process should involve reassessing how closely the IT efforts in question align with the organization's business objectives. Robert Whiteley, vice president and research director for Forrester Research, notes that IT managers who hope to make a case for spending with larger business goals need to speak in financial terms, even if that means learning new concepts and language. However, this doesn't mean that IT managers should dive into the nearest MBA program. Match the level of needed financial acumen to the level of IT investment. Including net present value or internal rate of return will help align the costs with the business requirements. Leverage templates and tools to model the expected cost within the context of your own environment, Stahl advises.

Look Beyond Tomorrow

There is a caveat to getting enmeshed in the ways of accounting: Don't fall prey to staring too much at the quarterly and annual balance sheets. Driving for immediate return is a sure way to be penny-wise and pound-foolish, especially in the data center.

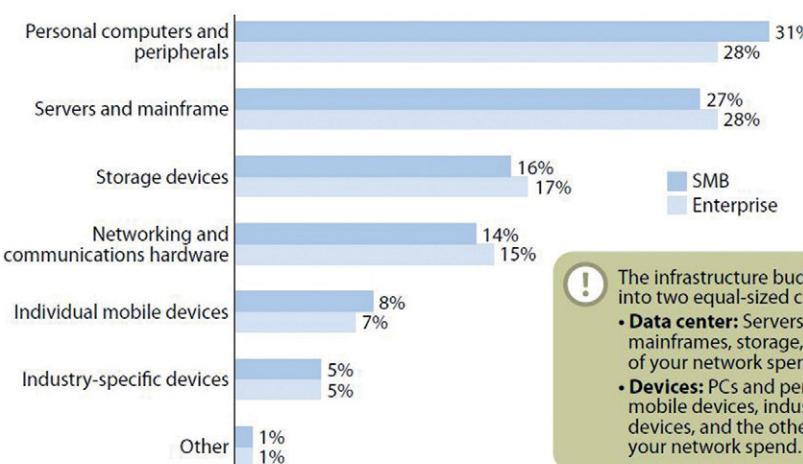
"A common issue Info-Tech sees is too much focus on the short-term cost/benefits," says Stahl. "When making a spending decision, capital is obviously important. However, the majority of an IT budget for the data center or infrastructure is realized in the operating expenses. It is not uncommon to see 65%

Common Spending Pitfalls

How To Identify & Avoid Them

Forrester Infrastructure Budget

"How much of your hardware and infrastructure budget goes toward the following technologies?"
(mean percentages used)



The infrastructure budget falls into two equal-sized categories:
• **Data center:** Servers and mainframes, storage, and half of your network spend.
• **Devices:** PCs and peripherals, mobile devices, industry-specific devices, and the other half of your network spend.

Base: 1,118 and 1,307 IT decision-makers at small businesses and enterprise-level firms, respectively
(percentages may not total 100 due to rounding)

SOURCE: FORRSIGHTS BUDGETS AND PRIORITIES TRACKER SURVEY, Q2 2010

SOURCE: FORRESTER RESEARCH, INC.

Forrester Research data shows the modern allocation of IT budgets. Companies able to effectively leverage IT consumerization trends may realize overall cost decreases in their PC and mobile device budgets.

the costs of a data center investment decision incurring after year two, yet the spending discussion is often tilted toward CAPEX. When IT leaders take the time to run the total costs for any recommendations and alternatives over five or six years, sometimes the cheapest up-front capital investments will end up costing more money."

Because cost analyses shift according to the time scale used, it's important to take general solution costs and adapt them into an organization's unique environment. Just because the industry says a system might have a three-year lifespan doesn't mean an organization shouldn't be in the habit of stretching systems to five years if appropriate for its business model.

Stahl notes an example in which a client was examining the cost of an enterprise database deployment using commodity hardware vs. non-commodity hardware. On a CAPEX basis, the deployment was cheaper using commodity hardware, and the business was only required by internal finance to illustrate costs for three years. However, when the IT manager modeled his costs over six years and accounted for all database and hardware maintenance costs, the non-commodity hardware was more than \$20,000 cheaper. Look at real-world timelines, not artificial ones.

Another spending pitfall is assuming that best-of-breed assets will deliver the most longevity and ROI. In other words, bigger and newer is not always better. Unfortunately, as Whiteley points out, buying individual best-of-breed components in the hope of greater ROI can actually impair overall systems architecture. Best-of-breed components push the burden of integration back on IT, not only up front during installation but also over time as management needs solutions expanded. Moreover, poorly integrated systems tend to inhibit scalability.

"Investigate converged infrastructure," advises Whiteley. "These combine server, storage, and network in a single chassis. In this case, you're putting most of your eggs in one basket, but we see a pre-integrated and optimized system creating a lower total cost of ownership in the long run. Another good example would be vertically integrated appliances. . . These are typically targeted at specific-use cases, like data warehousing

and analytics (often referred to as 'big data'). Again, the benefits of a fully integrated system outweigh the disadvantages of a single-sourced solution."

Of Cloud & Consumer

Of course, the flip side of being cautious about best of breed is not taking advantage of new opportunities. Many companies remain cautious about adopting cloud services, often for good reasons. Nevertheless, there are potentially significant cost benefits to handing off at least some operations to a provider. Ignoring these opportunities is a pitfall in its own right.

"Often, a hosting company can offer technology far more reasonably and reliably than you can yourself," says Rob Enderle, principal analyst at the Enderle Group. "While there are additional security concerns that need to be handled, factoring in the hosting option and making it part of the decision can reduce capital expenditures significantly."

At the other end of the infrastructure spectrum, consumerization of IT equipment is another rising force that shouldn't be pushed aside. Trying to prevent employees from using their own smartphones and other portable devices (including installed software) for business purposes will become increasingly futile. IT needs to seize the cost advantages of allowing this consumer equipment into the organization while also making business data secure with container and sandbox solutions.

In both the cloud and consumer cases, the locus of IT control is decentralizing. Spending money to prevent this will often prove wasteful. At the same time, letting these trends run wild is also a recipe for disaster.

"Consumer hardware and software, as well as public cloud services, are not usually 'business-ready,'" Whiteley points out. "They lack the security and IT controls necessary to function at enterprise scale. IT needs to find a way to bridge that gap. This means investing in additional security and management tools that help secure, manage, and support these non-enterprise-owned assets. It also means providing new investment in the data center for technologies like desktop virtualization, which allow companies to decouple the enterprise desktop and application environment from the underlying device." P

USED & REFURBISHED EQUIPMENT SPOTLIGHT

Make Sure Your Used Equipment Is Legit

Smart Sleuthing Keeps The Fakes At Bay

by Julie Knudson

COUNTERFEIT EQUIPMENT continues to be a concern for data centers, but it doesn't have to stop you from shopping the secondary market for bargains. Use these guidelines to make sure the equipment you're purchasing is legitimate.

Start at the source. A good reseller will have the expertise to identify and quarantine most counterfeit products before they can be resold. "The most important step you can take in avoiding counterfeit equipment is to buy from reputable resellers," says Brant Bertrand, senior operations manager at Digital Warehouse USA (www.digitalwarehouse.com). He advises buyers to be particularly careful when shopping online. Although many Web-based sellers are legitimate and trustworthy, online auction sites may unknowingly host overseas sellers pushing counterfeit products. "If the only Web site you can find is a storefront on eBay.com or a small three-page Web site with no contact information on the site, buyer beware," Bertrand says. Take the time to research potential vendors before buying.

Determine your vendor's counterfeit savvy. Even reputable resellers don't catch every fake that comes through the door, but you need to know that they make a good effort. Ask about the testing or inspection methods your potential vendor uses to identify counterfeit equipment. If the vendor doesn't have (or doesn't consistently follow) specific procedures to look for suspicious hardware, you've lost a primary safeguard in your quest for legitimate equipment. Any vendor's refusal to outline its inspection methodology based on "privacy concerns" should be a giant red flag, because a general explanation is sufficient to allay your concerns without compromising sensitive information. "With business being so competitive for resellers, most legitimate companies are going to display professionalism and follow through in all aspects of the transaction," says Morris Scott, president of DMD Systems Recovery (www.dmdsystems.com).

Ask about the equipment. Once you've narrowed down your vendor choices, it's time to dig deeper into their purchasing methods. Start by asking the reseller where it normally gets used equipment. Purchasing equipment directly

from enterprises that are in the process of upgrading or changing platforms is a common (and usually legitimate) response. If a vendor uses only overseas sources or refuses to describe its normal purchasing channels, look for a different provider. Scott also encourages buyers to ask detailed questions about the equipment itself. "Are all parts original equipment manufacturer? Does this equipment qualify for manufacturer's maintenance (if applicable)? What's the warranty period? Larger acquisitions may also warrant asking if they are an authorized reseller," he says. He cautions that warranty information and terms and conditions should be

put in writing—reluctance to do so may be a warning sign.

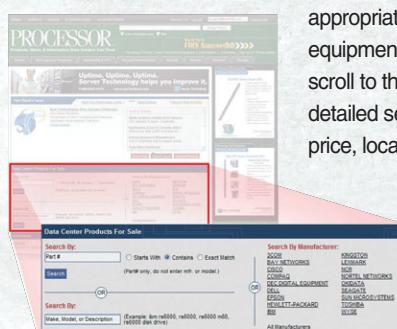
Don't fall for unbelievably low prices. A major draw of the secondary market is the ability to find great equipment for less money, but don't be sucked in by prices that are unrealistically low. "In today's marketplace, counterfeiters are creating everything from high-end line cards to expensive switches and selling them at ridiculously low prices," Bertrand says. "If you see 'new' products being sold at 50 to 60% off manufacturers' list prices, most likely you are dealing with fake equipment." Shop around so you know the fair market prices for the equipment you're buying. □

Find Used & Refurbished Equipment For Sale

Once you've made the decision to purchase used or refurbished equipment, finding the equipment you need is easy with Processor's online Data Center Products For Sale Database.

From Processor's home page (www.processor.com), you can search for a specific part number,

make, model, or description. Enter the information in the appropriate box and click Search. You'll see a list of available equipment. If you don't see the particular piece you're looking for, scroll to the bottom of the search results page to conduct a more detailed search. There, you can search by part number, model, price, location, and more.



Don't know the specific part number or model? Use the drill-down search on the Processor home page to view results from specific manufacturers. Simply click the manufacturer name, and you'll see a list of all equipment listings from that manufacturer.

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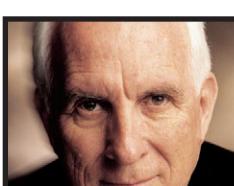
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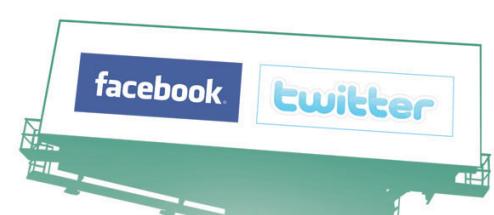
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JUNE**AITP****Region 18****Spring IT Conference**

June 18, 8 a.m. to 5 p.m.
Holiday Inn-Akron West
4073 Medina Road
Akron, Ohio
www.aitp-region18.org/ITCon/

Data Connectors Charlotte Tech-Security Conference

June 19
Renaissance Charlotte Suites Hotel
2800 Coliseum Centre Drive
Charlotte, N.C.
www.dataconnectors.com/events/2011/06Charlotte/inv_ex.asp

Installing & Configuring Windows 7 Client

June 20-24, 6 p.m.
Online Live
www.nhnorthflorida.com

AITP Oklahoma City

June 21
aitpokc.org

Leadership: Taking Lessons From The Movies

June 21, 1:30 to 4 p.m.
New Horizons of Dayton
1890 Commerce Center
Fairborn, Ohio
tinyurl.com/nhdayton06-21

AFCOM Central Texas

June 23, 11:30 a.m. to 1:30 p.m.
Marie Callender's Restaurant
9503 Research Blvd.
Austin, Texas
www.afcom.com/afcomnew/CentralTexas.HTML

New Horizons Career Expo

June 23, 9 a.m. to 4 p.m.
New Horizons of Austin
300 Highland Mall Blvd., Suite 100
Austin, Texas
tinyurl.com/nhaustin06-23

Office 2010 Test Drive: Word, Outlook & PowerPoint

June 23, 9:30 to 11:30 a.m.
New Horizons of Dayton
1890 Commerce Center
Fairborn, Ohio
tinyurl.com/3eddkvo

Office 2010 Test Drive: Access & Excel

June 23, 12:30 to 2:30 p.m.
New Horizons of Dayton
1890 Commerce Center
Fairborn, Ohio
tinyurl.com/nhdayton06-23

AITP Akron-Power Shell

June 28
Buffalo Wild Wings
5050 Eastpointe Drive
Medina, Ohio
www.akron-aitp.org/index.htm

Search Optimization Series: Advanced SEO

June 29, 10 to 11:30 a.m.
New Horizons Cincinnati
10653 Techwoods Circle
Cincinnati, Ohio
tinyurl.com/nhcincinnati06-29

Data Connectors Orange County Tech-Security Conference

June 30
Doubletree Hotel Anaheim/Orange County
100 City Drive
Orange, Calif.
www.dataconnectors.com/events/2011/06OrangeCounty/inv_ex.asp

JULY**Central Plains ISSA**

July 1, 1 p.m.
Wichita Marriott Restaurant
9100 E. Corporate Hills Drive
Wichita, Kan.
issa-cp.org

Configuring Windows Server 2008 Active Directory Domain Services

July 11-15, 6 p.m.
Online Live
www.nhnorthflorida.com

AITP Research Triangle Park

July 14
University Club
4200 Hillsboro St.
Raleigh, N.C.
www.rtp-aitp.org

Data Connectors Hartford Tech-Security Conference

July 14
Crowne Plaza Hotel
100 Berlin Road
Cromwell, Conn.
www.dataconnectors.com/events/2011/07Hartford/inv_ex.asp

AITP Oklahoma City

July 19
aitpokc.org

AITP Southwest Missouri

July 19
aitpspringfield.org

Cloud Control Conference

July 19-21
Hilton Boston Logan Airport
Boston, Mass.
www.cloudcontrolconference.com

Green Data Center Conference

July 19
Hilton Boston Logan Airport
Boston, Mass.
www.greendatacenterconference.com

ISSA Northern Virginia

July 19, 5:30 p.m.
issa-nova.org

Search Optimization Series: Pay Per Click Search Marketing

July 20, 10 to 11:30 a.m.
New Horizons Cincinnati
10653 Techwoods Circle
Cincinnati, Ohio
tinyurl.com/nhcincinnati06-29

Data Connectors Portland Tech-Security Conference

July 21
Doubletree Hotel Portland
1000 NE Multnomah St.
Portland, Ore.
www.dataconnectors.com/events/2011/07Portland/inv_ex.asp

AUGUST**Data Connectors Denver Tech-Security Conference**

Aug. 4
Denver, Colo.
www.dataconnectors.com/events/2011/08Denver/agenda.asp

Central Plains ISSA

Aug. 5, 1 p.m.
Wichita Marriott Restaurant
9100 E. Corporate Hills Drive
Wichita, Kan.
issa-cp.org

AITP Research Triangle Park

Aug. 11
University Club
4200 Hillsboro St.
Raleigh, N.C.
www.rtp-aitp.org

Data Connectors St. Louis Tech-Security Conference

Doubletree Hotel & Conference Center
16625 S. Swingley Ridge Road
Chesterfield, Mo.
www.dataconnectors.com/events/2011/08StLouis/inv_ex.asp

AITP Oklahoma City

Aug. 16
aitpokc.org

AITP Southwest Missouri

Aug. 16
aitpspringfield.org

ISSA Northern Virginia

Aug. 18, 5:30 p.m.
issa-nova.org

AITP St. Louis

Aug. 25, 5:30 p.m.
Crowne Plaza Clayton
7750 Carondelet Ave.
St. Louis, Mo.
stlouisaitp.org

Data Connectors Pittsburgh Tech-Security Conference

Aug. 25
Pittsburgh Marriott City Center
112 Washington Place
Pittsburgh, Pa.
www.dataconnectors.com/events/2011/08Pittsburgh/inv_ex.asp

Search Optimization Series: Google Analytics

Aug. 31, 10 to 11:30 a.m.
New Horizons Cincinnati
10653 Techwoods Circle
Cincinnati, Ohio
tinyurl.com/nhcincinnati06-29

SEPTEMBER**Central Plains ISSA**

Sept. 2, 1 p.m.
Wichita Marriott Restaurant
9100 E. Corporate Hills Drive
Wichita, Kan.
issa-cp.org

AITP Research Triangle Park

Sept. 8
University Club
4200 Hillsboro St.
Raleigh, N.C.
www.rtp-aitp.org

*Do you have an event you'd like to see listed?
Send an email to feedback@processor.com.*

GREEN TECH & TIPS

Initial Commitments, Little Follow-Up

Few Companies Monitor Results Of Green Tech Investments

BY ROD SCHER

NO ONE CAN DENY the growing importance of green IT. Investments in that sector have been booming, and there's plenty of industry buzz centered on controlling energy use, reducing the company's carbon footprint, and creating sustainable data center operations. By now, billions of dollars have been invested in such undertakings.

And, as CompTIA's "Second Annual Green IT Insights and Opportunities" study points out, more than three-quarters of organizations surveyed said that they factor green into their IT purchase considerations when looking at products such as desktop and laptop computers, printers, monitors, servers, data storage, and other networking equipment. In addition to purchasing energy-efficient IT products, some 74% of companies reportedly encourage nightly computer shutdowns, and 68% encourage users to utilize their computers' energy savings and sleep mode settings.

However, the CompTIA report also points out that many are failing to monitor the results of those investments, despite the fact that some 72% of CompTIA respondents say that difficulty proving the return on investment of green initiatives impedes their efforts to implement such programs. While many companies are making serious attempts to encourage green behavior, few are actually monitoring that behavior or documenting the results.

"Our study found that green IT has been growing as a priority," says Seth Robinson, director of information technology analysis

at CompTIA. "In 2009, only 9% of firms rated green IT as an upper-half organizational priority. That figure stands at 37% in 2011 and is expected to rise to 54% in 2013."

Measurable Success

Although investments indicate a steady and impressive increase in commitment to green IT initiatives, those investments may prove misguided—or at least ineffective—if companies are unable to measure and document their impact.

PUE (power usage effectiveness) is one convenient measurement. An imperfect metric, it is nonetheless a widely used standard for determining how much data center energy is being directly used for computing. Other tools for such measurement exist—there are plenty of software suites that can help monitor and control energy usage. Yet, according to the CompTIA report, although 48% of respondents indicate that they

plan to employ such tools, only about 16% of organizations currently do so.

For example, many companies have turned to virtualization as a means of reducing energy consumption and optimizing the organization's computing efficiency. CompTIA notes that the virtualization approach is in fact very effective, adding that virtualization is "responsible for some of the largest gains in energy reduction" seen in the industry. But what about metrics

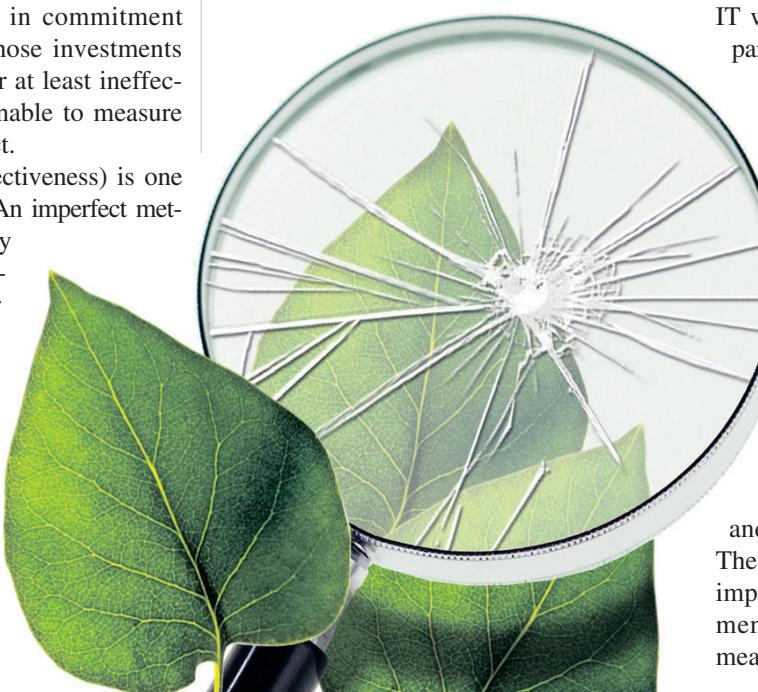
to document those gains? Those are lacking, as is the will (or perhaps the time and staffing) to implement them, it seems.

"With green as a lower priority, IT staff were likely given directives to become more energy efficient, but those efforts were not tied into the proper metrics for measuring," Robinson says. "As green becomes a larger priority, IT will have to work with operations and finance to more clearly define the metrics for green initiatives. This is just one more example of how IT will become more integrated into other parts of the business."

Balancing Opportunities & Costs

The report identifies cost savings, reduced energy consumption, and environmental impact as some of the primary drivers for the adoption of green IT initiatives. At the same time, says CompTIA, the top challenges to the adoption of green initiatives are implementation costs and the lack of consistent tools for measurements. Yet, in order to validate

those implementation costs, consistent and accurate measurement are required. The fact is that these sometimes-expensive implementations require a further investment in costly measurement tools as a means of justifying the initial expense. □



Processor Solutions Directory

Here are brief snapshots of several companies offering products designed for the data center and IT industry. Listings are sorted by category, making it easy for you to find and compare companies offering the products and services you need.

You can find more detailed information on these companies and the products they offer inside this issue.

To list your company and products, call (800) 247-4880.

PHYSICAL INFRASTRUCTURE

CYBER SWITCHING®

Cyber Switching is an innovator and manufacturer of power management solutions used to distribute power throughout an entire data center, from the building infrastructure to the rack level. Cyber Switching products provide companies with quality power data throughout the data center, enabling them to make sound, informed decisions regarding their power grid. Located in San Jose, Calif., Cyber Switching began pioneering power distribution technologies in 1994 and continues to design and develop innovative and technically advanced power solutions such as the ePower, PM8, Dualcom S, EMC, Galaxy Series, E Series, and PS Series.

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AVTECH

AVTECH Software, founded in 1988, is focused on making the monitoring and management of systems, servers, networks, and data center environments easier. AVTECH provides powerful, easy-to-use software and hardware that saves organizations time and money while improving operational efficiency and preparedness. AVTECH products use advanced alerting technologies to communicate critical status information and can perform automatic corrective actions.

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BayTech®

BayTech was founded in 1976 and, since the 1990s, has developed unique products for remote power management. The company uses printed circuit board instead of wires for a better, more resilient connection between the data center equipment and the receptacle. BayTech provides an extensive Web site with brochure downloads, warranty information, and reseller support and also offers evaluation units for data centers.

Products Sold:

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- Power transfer switches
- Console management and remote site management

(800) 523-2702 | www.baytech.net

PHYSICAL INFRASTRUCTURE

DTI device technologies, inc.

Device Technologies has designed, manufactured, and sold specialty fasteners to a broad spectrum of industries since 1984. The company's product line serves a broad spectrum of industries, including banking/business machines, computer, data storage, and transportation. The company provides high-performance, economical products and continues to invest in R&D to enhance opportunities for its product and process technologies in compliance with ISO 9001 and AS 9100 standards.

Products Sold:

A complete line of cable and fiber protection/management products including grommet edging and trim, sleeving and wrap, fiber modules and enclosure seals.

(800) 669-9682 | www.devicetech.com

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DATA CENTER DEPOT

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Data Center Depot prides itself on providing the best selection, pricing, and support for data center products. Our diversified product line can meet the specific needs of data center managers responsible for virtually any type of corporate setup. We are a major manufacturer and also distribute the product lines for top companies in the industry. Most of our products are available via our online store, but we encourage you to contact us so we can help you find the right products for your requirements and budget.

Products Sold:

- Data cabinets, racks, and accessories
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- Consoles and monitor walls
- Power supplies
- Cable ladders
- Patch panels
- Storage furniture

(877) 429-7225 | www.DataCenterDepot.com

PHYSICAL INFRASTRUCTURE

Based in New York City, Hergo Ergonomic Support Systems is an independent designer and manufacturer of enclosure cabinet solutions, technical computer furniture, and modular racking systems. The company's products are designed to promote organization in the workspace and to increase the productivity of computers, peripherals, and communications equipment. Hergo is known for its high-quality products and superior customer service.

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- Motorized workstations
- Flat-panel arms
- Computer desks
- Cable management
- Power management

(888) 222-7270 | www.hergo.com

PHYSICAL INFRASTRUCTURE

Established in 2008, PDUsDirect.com is an online wholesaler providing a select line of PDUs for server and networked environments. PDUs Direct's basic, metered, and switched Rack PDUs provide local and remote power management, power monitoring, and environmental monitoring. We pride ourselves in offering industrial-grade quality products at the lowest prices, with the fastest shipping (most orders shipped within 24 hours) and simplest purchase process.

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Processor.com**PHYSICAL INFRASTRUCTURE**

For more than 25 years, Texas-based Information Support Concepts has been a leading provider of a variety of data center and telecom solutions, marketed directly and through VARs. ISC prides itself on identifying the needs of today's fast-paced and ever-changing computing environments and providing products that meet those needs. ISC's online catalog ensures you'll always have the most current product options and information available, but if you don't see what you need, contact ISC—there's a good chance it can provide the custom solution right for you.

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- Bulk cable

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PHYSICAL INFRASTRUCTURE

Sensaphone has been designing and manufacturing remote monitoring systems for more than 25 years and has more than 300,000 of its products in use. Sensaphone's product lineup offers a full range of devices with a broad number of features and applications designed to monitor your entire infrastructure and alert you to changes. All product engineering functions, including hardware and software design and circuit board layout and assembly, are performed at the Sensaphone facility in Aston, Penn.

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PHYSICAL INFRASTRUCTURE

Upsite Technologies was founded in 2001 to address data center needs for products and solutions reaching far beyond standard engineering and consulting offerings. The company innovates elegantly engineered products specifically designed to maximize data center airflow efficiency, improve PUE, and increase heat density. Upsite designs and manufactures the LOK family of products, which provides superior sealing, maximum energy savings, and the best protection available for your IT equipment.

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PHYSICAL INFRASTRUCTURE

RackSolutions has been serving the data center market for more than 10 years. All of our products are designed, engineered, built, and shipped under our own roof. We have product solutions available for every major OEM, but if one of our existing products doesn't fit your needs, our top-notch mechanical and electrical engineers can create the item you need from scratch, solving even the toughest installation design challenges. Best of all, we typically don't charge up-front fees for design services.

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Lexington, Mass.-based Ipswitch develops software to increase business productivity. WhatsUp Gold, one of the company's three divisions, sells network management software along with system, application, and event log monitoring solutions. Besides its eponymously named flagship software, the vendor offers helpful IT aids such as WhatsConnected, WhatsUp Gold Engineer's Toolkit, and WhatsUp Event Log Management. The goal of WhatsUp Gold is to protect, maintain, and keep available the infrastructure vital to your organization.

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Processor.com

NETWORKING & VPN



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Products Sold:

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- Software for alarming based on unusual or potentially hazardous network traffic patterns

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STORAGE

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Boasting more than 20 years of experience in the industrial computing market, iStarUSA Group has made its mark in the design and manufacture of rackmount chassis, industrial power supplies, data storage, enclosed cabinets and racks, and custom power solutions. The group reaches a number of vertical markets via its five divisions: Claypower, Claytek, iStarUSA, RaidAge, and Xeal.

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• Claytek: Racks and enclosures	• RaidAge: Data storage
	• Xeal: Industrial power

(888) 989-1189 | www.istarusa.com

SERVERS



Chenbro is a leader in enclosure solutions, selling its products primarily to system integrators and OEM and channel partners. The company's extensive research and development efforts help it to keep its competitive edge and maintain market leadership, with special focus on thermal, EMI, and acoustic solutions. Taiwan-based Chenbro has offices in the United States, UK, The Netherlands, and China.

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NETWORKING & VPN



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